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(54) **Oxazolidinone antibiotics**

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(56) References cited:
WO-A1-02/50040 **US-A1- 2007 060 558**

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Description

[0001] The present invention concerns novel antibiotic derivatives, a pharmaceutical antibacterial composition containing them and the use of these compounds in the manufacture of a medicament for the treatment of infections (e.g. bacterial infections). These compounds are useful antimicrobial agents effective against a variety of human and veterinary pathogens including among others Gram positive and Gram negative aerobic and anaerobic bacteria and mycobacteria.

[0002] The intensive use of antibiotics has exerted a selective evolutionary pressure on micro-organisms to produce genetically based resistance mechanisms. Modem medicine and socio-economic behaviour exacerbates the problem of resistance development by creating slow growth situations for pathogenic microbes, e.g. in artificial joints, and by supporting long-term host reservoirs, e.g. in immuno-compromised patients.

[0003] In hospital settings, an increasing number of strains of *Staphylococcus aureus, Streptococcus pneumoniae, Enterococcus spp.,* and *Pseudomonas aeruginosa,* major sources of infections, are becoming multi-drug resistant and therefore difficult if not impossible to treat:

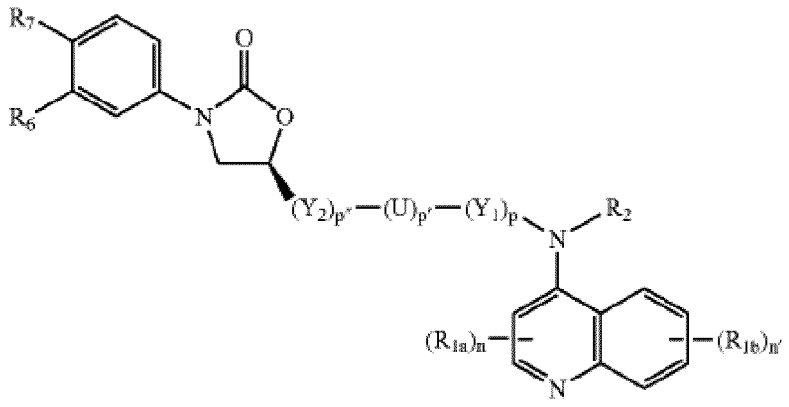
- *S. aureus* is resistant to β-lactams, quinolones and now even to vancomycin;
- *S. pneumoniae* is becoming resistant to penicillin or quinolone antibiotics and even to new macrolides;
- *Enteroccocci* are quinolone and vancomycin resistant and β-lactam antibiotics are inefficacious against these strains;
- *Enterobacteriacea* are cephalosporin and quinolone resistant;
- *P. aeruginosa* are β-lactam and quinolone resistant.

[0004] Further new emerging organisms like *Acinetobacter spp.* or *Clostridium difficile,* which have been selected during therapy with the currently used antibiotics, are becoming a real problem in hospital settings. In addition, micro-organisms that are causing persistent infections are increasingly being recognized as causative agents or cofactors of severe chronic diseases like peptic ulcers or heart diseases.

[0005] Certain antibacterial agents are known from WO 2006/081289, but these agents do not contain an oxazolidinone moiety. Further antibacterial agents are disclosed in WO 02/050040, but in these agents the piperazine ring is not directly bound to the quinoline analog moiety. Certain oxazolidinone derivatives having effects on the central nervous system are known from EP 0300272.

[0006] Besides, US 2007/060558 describes antibacterial compounds of the formula (XLIIa)

(XLIIa)

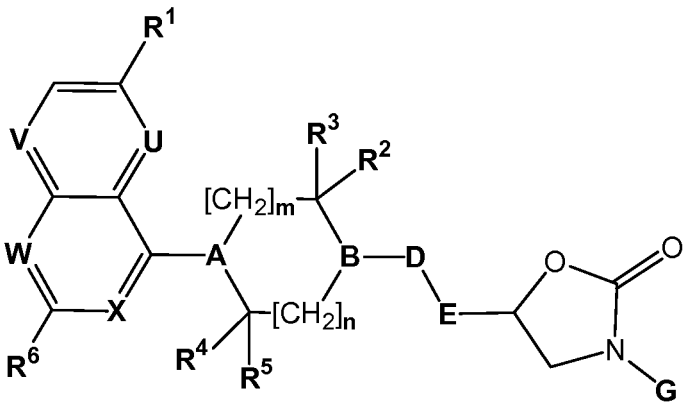


wherein R_{1a} and R_{1b} are substituents that can notably each independently be selected from hydrogen and alkoxy, R_2 can notably be hydrogen; Y_1 and Y_2 can notably each independently be a linear of branched or cyclic C_1-C_6 alkyl chain, containing if need be one or more amine, amide, thioamide, sulfonyl, sulfonamide, oxo, carboxy, thiocarboxy, carbonyl, thiocarbonyl, urea, thiourea, carbamate, oxime, ether or thioether function and wherein the alkyl chain can additionally bear 1 to 4 substituents, which are identical or different, and which are selected from the group consisting of notably halogen hydroxy, trifluoromethyl or carboxy; U, which can be linked by a single or multiple bond to Q, Y_1, Y_2 or A, is an amine, amide, thioamide, sulfonyl, sulfonamide, carboxy, thiocarboxy, carbonyl, urea, thiourea, carbamate, ether, thioether, thiocarbonyl, sulfonate, oxime, oxyamine, alkylamine (NR), alkoxyimine (C-N-OR) or alkoxyiminocarbonyl (C(O)-C-NOR) function with R representing a hydrogen atom or a C_1-C_6 alkyl substituent, which is linear, branched or cyclic, containing if need be one or more amine, amide, thioamide, sulfonyl, sulfonamide, carboxy, thiocarboxy, carbonyl, thiocarbonyl, ether or thioether functions; R_6 and R_7 are substituents which are identical or different, being able if need be to form, together, a cyclic structure and representing a hydrogen atom or a substituent which is selected from the

group consisting of halogen, hydroxy, heterocycle, aryl or heteroaryl, or an alkyl, alkoxy or alkylamine substituent, the said alkyl groups comprising 1 to 6 carbon atoms, which are saturated or unsaturated, linear, branched or cyclic, containing if need be one or more amine, amide, thioamide, sulfonyl, sulfonamide, carboxy, thiocarboxy, carbonyl, thiocarbonyl, ether or thioether functions and being able to bear 1 to 4 substituents, which are identical or different, and which are notably selected from halogen, hydroxy, trifluoromethyl, trifluoromethoxy, carboxy, carbonyl, amine or nitro; n and n' are, independently of each other, 0, 1, 2 or 3; and p, p' and p" are, independently of each other, 0 or 1.

[0007] Various embodiments of the invention are presented hereafter:

1) The present invention relates to novel antibiotic compounds of formula (IN)



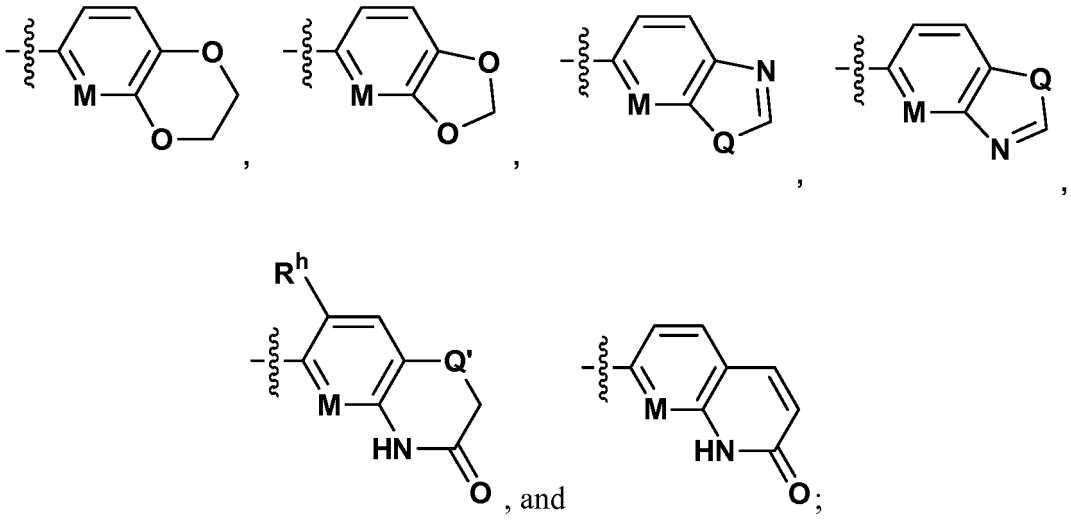
(I_N)

wherein

R^1 represents hydrogen, alkoxy, halogen or cyano (preferably alkoxy);
one or two (preferably two) of **U, V, W,** and **X** (preferably of **U, W,** and **X**) represent(s) N and the remaining each represent CH, or, in the case of X, represent CR^a;
R^a represents hydrogen or halogen;
R^6 represents hydrogen or $(C_1\text{-}C_4)$alkyl;
A represents N;

- **B** represents N; **D** represents a bond; **E** represents CH_2 or *-$COCH_2$- wherein the asterisk indicates the bond which is attached to B; R^2, R^3, R^4 and R^5 each represent H; and **m** and **n** each represent the integer 1; or
- **B** represents C(OH), **D** represents a bond, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, and **m** and **n** each represent the integer 1; or
- **B** represents CH, **D** represents NR^b, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, R^b represents H or $(C_1\text{-}C_4)$alkyl, and **m** and **n** each represent the integer 1; or
- **B** represents CH, **D** represents NH, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, **m** represents the integer 2, and **n** represents the integer 0;

G represents phenyl which is unsubstituted, mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of $(C_1\text{-}C_4)$alkyl, $(C_1\text{-}C_4)$alkoxy, fluoroalkyl, fluoroalkoxy, cyano, halogen and $-NR^{N1}R^{N2}$; or
G represents pyridin-2-yl which is mono-substituted in position 5, wherein the substituent is selected from the group consisting of $(C_1\text{-}C_4)$alkyl and fluoroalkyl; or
G represents 6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl; or
G represents a group selected from the group consisting of:

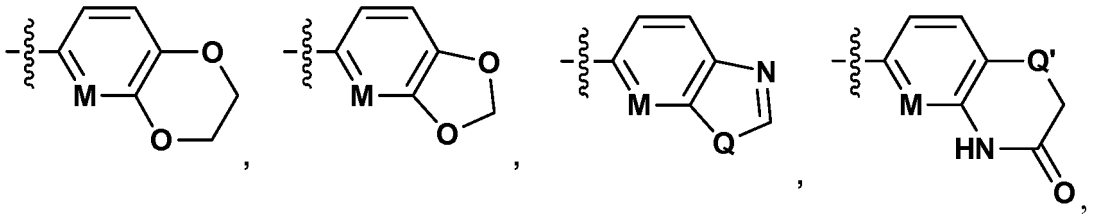


wherein
R^h represents hydrogen or fluorine;
M represents CH or N; and **Q** and **Q'** independently represent O or S; and
R^{N1} and R^{N2} independently represent $(C_1\text{-}C_4)$alkyl, or together with the nitrogen that carries them form a pyrrolidine ring.

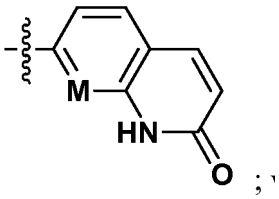
2) A further embodiment of the invention relates to novel antibiotic compounds of formula (IN) according to embodiment 1), wherein
R^6 represents hydrogen;

- **B** represents N; **D** represents a bond; **E** represents CH_2 or *-$COCH_2$- wherein the asterisk indicates the bond which is attached to B; R^2, R^3, R^4 and R^5 each represent H; and **m** and **n** each represent the integer 1; or
- **B** represents C(OH), **D** represents a bond, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, and **m** and **n** each represent the integer 1; or
- **B** represents CH, **D** represents NR^b, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, R^b represents H or $(C_1\text{-}C_4)$alkyl, and **m** and **n** each represent the integer 1; or
- **B** represents CH, **D** represents NH, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, **m** represents the integer 2, and **n** represents the integer 0; and

G represents phenyl which is unsubstituted, mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of $(C_1\text{-}C_4)$alkyl, $(C_1\text{-}C_4)$alkoxy, fluoroalkyl, fluoroalkoxy, cyano, halogen and -$NR^{N1}R^{N2}$ (preferably from the group consisting of $(C_1\text{-}C_3)$alkyl, $(C_1\text{-}C_3)$alkoxy and halogen); or
G represents pyridin-2-yl which is mono-substituted in position 5, wherein the substituent is selected from the group consisting of $(C_1\text{-}C_4)$alkyl and fluoroalkyl; or
G represents 6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl; or
G represents a group selected from the group consisting of:

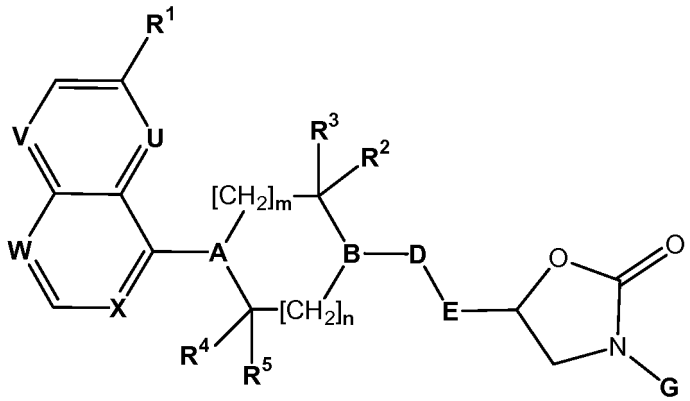


and



wherein
M represents CH or N; and **Q** and **Q'** independently represent O or S.

3) A further embodiment of the invention relates to novel antibiotic compounds of formula (IN) according to embodiment 1), which are also compounds of formula (I_{N-P1})



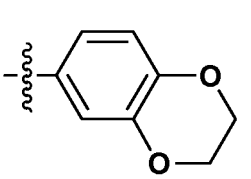
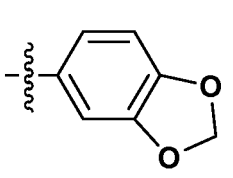
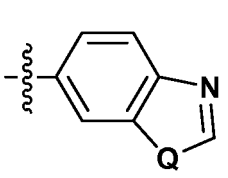
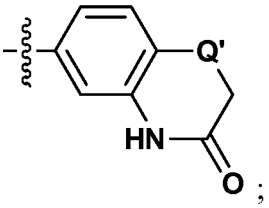
(I_{N-P1})

wherein

R^1 represents alkoxy, halogen or cyano (preferably alkoxy); one or two (preferably two) of **U, V, W,** and **X** (preferably of **U, W,** and **X**) represent(s) N and the remaining each represent CH, or, in the case of X, represent CR^a;
R^a represents hydrogen or halogen (preferably hydrogen); **A** represents N;

- **B** represents N, **D** represents a bond, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, and **m** and **n** each represent the integer 1; or
- **B** represents C(OH), **D** represents a bond, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, and **m** and **n** each represent the integer 1; or

G represents phenyl which is unsubstituted, mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of (C_1-C_4)alkyl, (C_1-C_4)alkoxy, fluoroalkyl, fluoroalkoxy, cyano, halogen and -$NR^{N1}R^{N2}$ (preferably from the group consisting of (C_1-C_3)alkyl, (C_1-C_3)alkoxy and halogen); or
G represents pyridin-2-yl which is mono-substituted in position 5, wherein the substituent is selected from the group consisting of (C_1-C_4)alkyl and fluoroalkyl; or
G represents a group selected from the group consisting of:

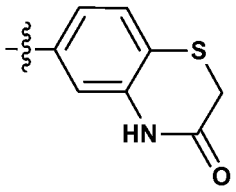

,

,

, and

;

wherein

Q and **Q'** independently represent O or S; and
R^{N1} and R^{N2} independently represent $(C_1\text{-}C_4)$alkyl, or together with the nitrogen that carries them form a pyrrolidine ring.

[0008] The following paragraphs provide definitions of the various chemical moieties for the compounds according to the invention and are intended to apply uniformly throughout the specification and claims, unless an otherwise expressly set out definition provides a broader or narrower definition.

[0009] In this patent application, a bond interrupted by a wavy line shows the point of attachment of the radical drawn. For example, the radical drawn below



is the 4*H*-benzo[1,4]thiazin-3-on-6-yl group.

[0010] The term "halogen" refers to fluorine, chlorine, bromine or iodine; especially to fluorine, chlorine or bromine; preferably to fluorine or chlorine. In another embodiment, the term halogen as used for the substituents R^a and R^1 preferably refers to fluorine.

[0011] The term "alkyl", used alone or in combination, refers to a straight or branched chain alkyl group containing one to four carbon atoms. The term "$(C_x\text{-}C_y)$alkyl" (x and y each being an integer), refers to an alkyl group as defined before containing x to y carbon atoms. For example a $(C_1\text{-}C_4)$alkyl group contains from one to four carbon atoms. Representative examples of alkyl groups include methyl, ethyl, *n*-propyl, *iso*-propyl, *n*-butyl, *iso*-butyl, *sec*-butyl and *tert*-butyl. Preferred are methyl, ethyl, *n*-propyl and *iso*-propyl. Most preferred are ethyl and methyl.

[0012] The term "$(C_2\text{-}C_4)$alkyl which is mono- or di-substituted with hydroxy" means a $(C_2\text{-}C_4)$alkyl group as defined before, wherein one or two hydrogen atoms have been replaced by hydroxy. Examples of such groups are 2-hydroxyethyl, 3-hydroxypropyl, 1,3-dihydroxy-propan-2-yl and 2,3-dihydroxypropan-1-yl. Preferred is 2-hydroxyethyl.

[0013] The term "alkoxy", used alone or in combination, refers to an alkyl-O- group wherein the alkyl group is as defined before. The term "$(C_x\text{-}C_y)$alkoxy" (x and y each being an integer) refers to an alkoxy group as defined before containing x to y carbon atoms. For example a $(C_1\text{-}C_4)$alkoxy group contains from one to four carbon atoms. Representative examples of alkoxy groups include methoxy, ethoxy, *n*-propoxy, *iso*-propoxy, *n*-butoxy, *iso*-butoxy, *sec*-butoxy and *tert*-butoxy. Preferred are ethoxy and methoxy. Most preferred is methoxy.

[0014] The term "fluoroalkyl" refers to an alkyl group as defined before containing one to three carbon atoms in which one or more (and possibly all) hydrogen atoms have been replaced with fluorine. The term "$(C_x\text{-}C_y)$fluoroalkyl" (x and y each being an integer) refers to a fluoroalkyl group as defined before containing x to y carbon atoms. For example a $(C_1\text{-}C_3)$fluoroalkyl group contains from one to three carbon atoms in which one to seven hydrogen atoms have been replaced with fluorine. Representative examples of fluoroalkyl groups include trifluoromethyl and 2,2,2-trifluoroethyl. Preferred is trifluoromethyl.

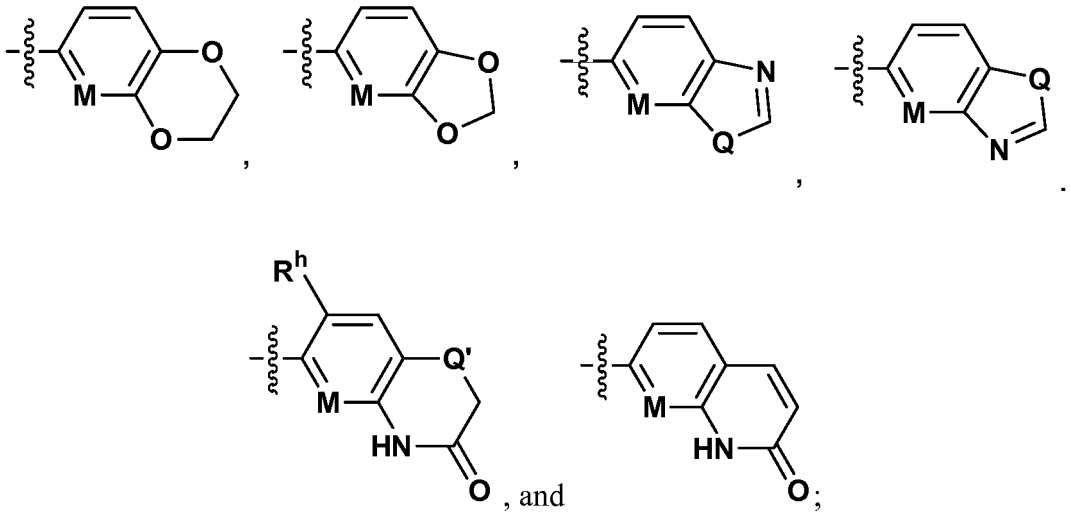
[0015] The term "fluoroalkoxy" refers to an alkoxy group as defined before containing one to three carbon atoms in which one or more (and possibly all) hydrogen atoms have been replaced with fluorine. The term "$(C_x\text{-}C_y)$fluoroalkoxy" (x and y each being an integer) refers to a fluoroalkoxy group as defined before containing x to y carbon atoms. For example a $(C_1\text{-}C_3)$fluoroalkoxy group contains from one to three carbon atoms in which one to seven hydrogen atoms have been replaced with fluorine. Representative examples of fluoroalkoxy groups include trifluoromethoxy, difluoromethoxy and 2,2,2-trifluoroethoxy. Preferred are (C_1)fluoroalkoxy groups such as trifluoromethoxy and difluoromethoxy. Most preferred is trifluoromethoxy.

[0016] Examples of **G** representing "phenyl which is unsubstituted, mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4", wherein the substituents are as defined for formula (I) and/or formula (IN), are selected from the group consisting of phenyl, 3-trifluoromethoxy-phenyl, 4-trifluoromethoxy-phenyl, 4-bromo-3-fluoro-phenyl, 3,4-dimethoxy-phenyl, 4-fluoro-phenyl, 3-trifluoromethyl-phenyl, 3-chloro-4-fluoro-phenyl, 4-methyl-3-trifluoromethyl-phenyl, 4-(difluoromethoxy)-phenyl, 3-cyano-phenyl, 4-(pyrrolidin-1-yl)-phenyl, 3-methoxy-phenyl, 4-n-propyl-phenyl, 4-ethyl-phenyl, 3,4-dimethyl-phenyl, 3-chloro-4-methoxy-phenyl, 3,4-difluoro-phenyl, 4-fluoro-3-methylphenyl, 4-bromo-3-methyl-phenyl, 3-bromo-4-methyl-phenyl, 4-methoxy-3-trifluoromethyl-phenyl, 3-dimethylamino-phenyl and 3-fluoro-4-methyl-phenyl. In addition to the above groups, a further example is 3-fluoro-phenyl. Preferred groups are mono-substituted in

position 3 or 4, or disubstituted in positions 3 and 4, wherein the substituents are as defined for formula (I) and/or formula (IN). Preferably the substituents are independently selected from the group consisting of (C_1-C_3)alkyl, (C_1-C_3)alkoxy and halogen.

[0017] Examples of **G** representing "pyridin-2-yl which is mono-substituted in position 5, wherein the substituent is selected from the group consisting of (C_1-C_4)alkyl and fluoroalkyl" are 3-methyl-pyridin-6-yl and 3-trifluoromethyl-pyridin-6-yl.

[0018] Examples of **G** representing "a group selected from the group consisting of:



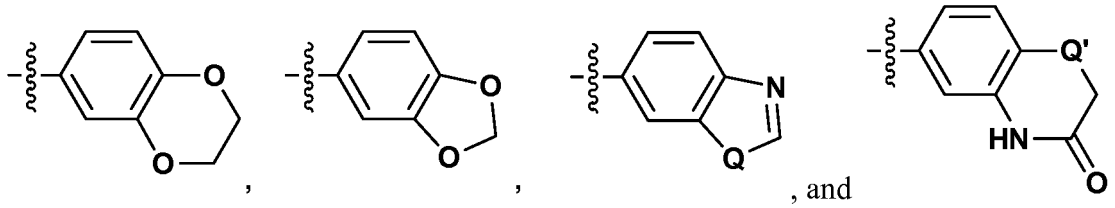
wherein

R^h represents hydrogen or fluorine;

M represents CH or N; and **Q** and **Q'** independently represent O or S", as used for formula (I) and/or formula (IN), are 2,3-dihydro-benzo[1,4]dioxin-6-yl, benzo[1,3]dioxol-5-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]oxazin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl, 3-oxo-3,4-dihydro-2H-pyrido[3,2-b][1,4]oxazin-6-yl, 7-fluoro-3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl, 2-oxo-1,2-dihydro-quinolin-7-yl, benzothiazol-6-yl, benzothiazol-5-yl and benzooxazol-6-yl. In another embodiment, examples are 2,3-dihydro-benzo[1,4]dioxin-6-yl, benzo[1,3]dioxol-5-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]oxazin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl, 3-oxo-3,4-dihydro-2H-pyrido[3,2-b][1,4]oxazin-6-yl, 2-oxo-1,2-dihydro-quinolin-7-yl, benzothiazol-6-yl and benzooxazol-6-yl. In yet another embodiment, examples are 2,3-dihydro-benzo[1,4]dioxin-6-yl, benzo[1,3]dioxol-5-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]oxazin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl, 3-oxo-3,4-dihydro-2H-pyrido[3,2-b][1,4]oxazin-6-yl, 2-oxo-1,2-dihydro-quinolin-7-yl and benzothiazol-6-yl. Preferred are 2,3-dihydro-benzo[1,4]dioxin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]oxazin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl, 3-oxo-3,4-dihydro-2H-pyrido[3,2-b][1,4]oxazin-6-yl and 2-oxo-1,2-dihydro-quinolin-7-yl. In yet another embodiment, preferred are 3-oxo-3,4-dihydro-2*H*-benzo[1,4]oxazin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl, 3-oxo-3,4-dihydro-2*H*-pyrido[3,2-b][1,4]oxazin-6-yl, and 7-fluoro-3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl.

[0019] Further examples of such groups are the following groups [as used for the substituent G in formula ($I_{N\text{-}P1}$)], wherein

G represents "a group selected from the group consisting of:



wherein **Q** and **Q'** independently represent O or S".

[0020] Preferred examples of such groups are 2,3-dihydro-benzo[1,4]dioxin-6-yl, benzo[1,3]dioxol-5-yl, 3-oxo-3,4-

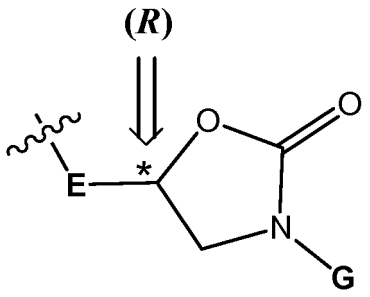
dihydro-2*H*-benzo[1,4]oxazin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl, benzothiazol-6-yl and benzooxazol-6-yl. More preferred are 2,3-dihydro-benzo[1,4]dioxin-6-yl, benzo[1,3]dioxol-5-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl and benzothiazol-6-yl.

[0021] An example of $\mathbf{R}^2$ representing (C_1-C_4)alkoxy-carbonyl is ethoxy-carbonyl.

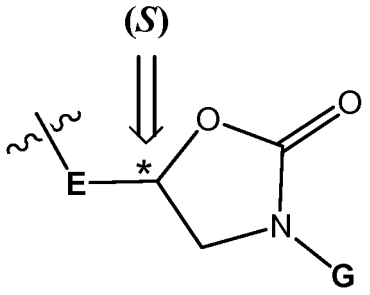
[0022] Examples of -$NR^{N1}R^{N2}$ groups are dimethylamino and pyrrolidin-1-yl.

[0023] In the following, further embodiments of the invention are described:

4) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 3), wherein the stereocenter at position 5 of the oxazolidin-2-one ring is in (R)-configuration:



5) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 3), wherein the stereocenter at position 5 of the oxazolidin-2-one ring is in (*S*)-configuration:



6) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 4) or 5), wherein one of **U, V, W,** and **X** (preferably one of **U, V** and **W,** and notably **W**) represents N and the remaining each represent CH or, in the case of X, represent CR^a; $\mathbf{R^1}$ represents hydrogen, alkoxy, halogen or cyano (notably hydrogen or alkoxy); and $\mathbf{R^6}$ represents hydrogen or (C_1-C_4)alkyl (especially methyl).

7) A further embodiment of the invention relates to compounds according to any one of embodiments 1) or 4) to 6), wherein $\mathbf{R^6}$ represents hydrogen.

8) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 7), wherein $\mathbf{R^1}$ represents alkoxy (especially methoxy).

9) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 7), wherein two of **U, W,** and **X** (preferably **U** and **W** or **W and X**) represent N and the remaining and **V** each represent CH, or, in the case of X, represent CR^a; wherein $\mathbf{R^a}$ represents hydrogen or fluorine.

10) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 7), wherein **U** and **W** each represent N; **V** represents CH and **X** represents CR^a; wherein $\mathbf{R^a}$ represents hydrogen or fluorine (especially fluorine).

11) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 7), wherein **W and X** each represent N; and **U** and **V** each represent CH.

12) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 7), 9)

or 10) wherein R^a represents hydrogen.

13) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 2) or 4) to 12), wherein **A** represents N; and

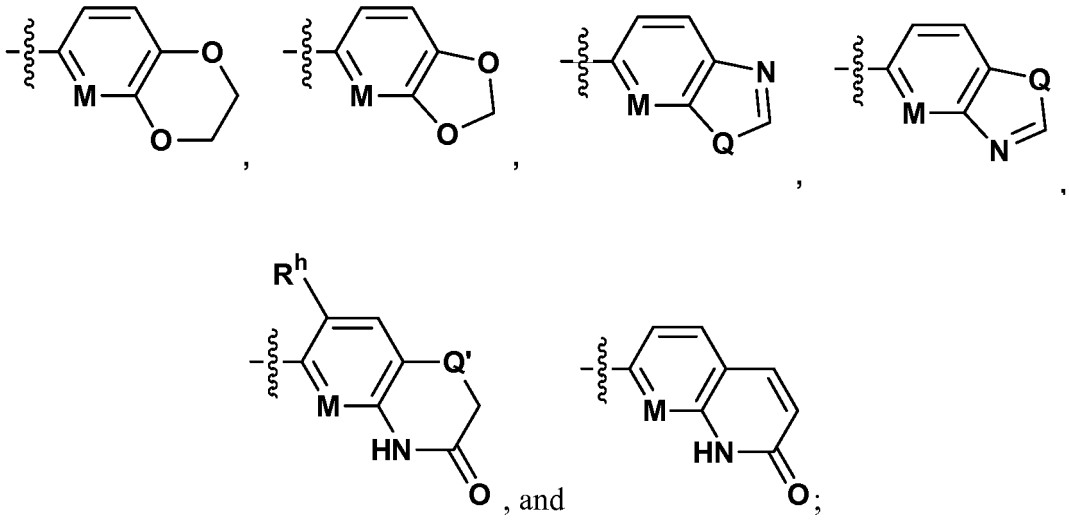
- **B** represents N; **D** represents a bond; **E** represents CH_2 or *-$COCH_2$- wherein the asterisk indicates the bond which is attached to B; R^2, R^3, R^4 and R^5 each represent H; and **m** and **n** each represent the integer 1; or
- **B** represents C(OH), **D** represents a bond, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, and **m** and **n** each represent the integer 1; or
- **B** represents CH, **D** represents NR^b, **E** represents CH_2, R^2, R^3, R^4 and R^5 each represent H, R^b represents H or (C_1-C_4)alkyl, and **m** and **n** each represent the integer 1.

14) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 13), wherein **E** represents CH_2.

15) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 14), wherein **A** represents N and **B** represents N.

16) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 14), wherein **A** represents N and **B** represents CH or C(OH).

17) A further embodiment of the invention relates to compounds according to any one of embodiments 1) or 4) to 16), wherein
G represents phenyl which is mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of (C_1-C_4)alkyl, (C_1-C_4)alkoxy, fluoroalkyl, fluoroalkoxy and halogen; or
G represents 6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl; or
G represents a group selected from the group consisting of:

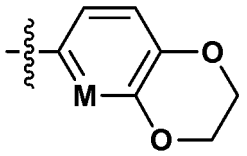
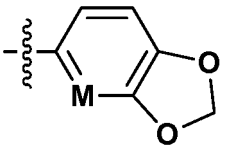
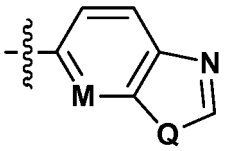
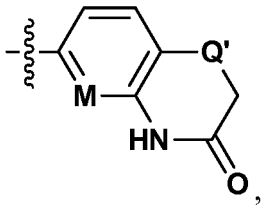


wherein

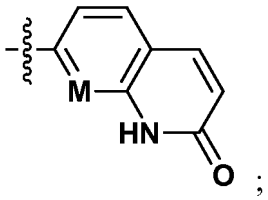
R^h represents hydrogen or fluorine;
M represents CH or N; and **Q** and **Q'** independently represent O or S.

18) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 2) or 4) to 17), wherein
G represents phenyl which is mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of (C_1-C_4)alkyl, (C_1-C_4)alkoxy, fluoroalkyl, fluoroalkoxy and halogen; or
G represents 6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl; or

G represents a group selected from the group consisting of:

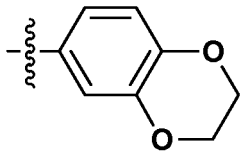
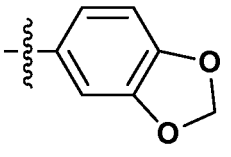
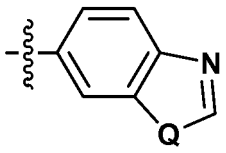
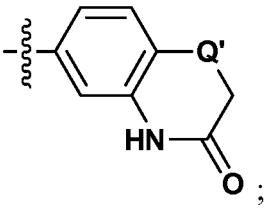

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wherein
M represents CH or N; and **Q** and **Q'** independently represent O or S.

19) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 18), wherein
G represents phenyl which is mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of $(C_1\text{-}C_4)$alkyl, $(C_1\text{-}C_4)$alkoxy, fluoroalkyl, fluoroalkoxy and halogen; or
G represents a group selected from the group consisting of:


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wherein **Q** and **Q'** independently represent O or S.

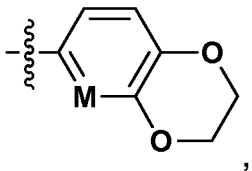
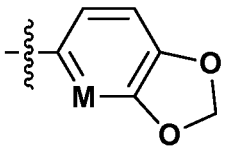
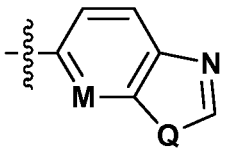
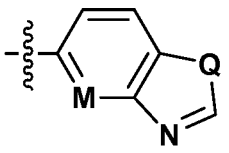
20) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 19), wherein **G** represents phenyl which is mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of $(C_1\text{-}C_4)$alkyl, $(C_1\text{-}C_4)$alkoxy, fluoroalkyl, fluoroalkoxy and halogen.

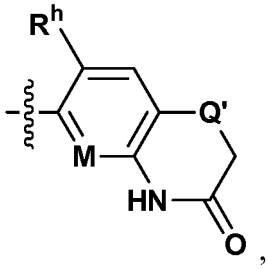
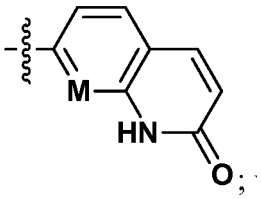
21) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 20), wherein **G** represents phenyl which is mono-substituted in position 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of $(C_1\text{-}C_3)$alkyl, $(C_1\text{-}C_3)$alkoxy, fluoroalkyl, fluoroalkoxy and halogen.

22) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 21), wherein **G** represents phenyl which is mono-substituted in position 4, or disubstituted in positions 3 and 4, wherein the substituent in position 4 is selected from the group consisting of $(C_1\text{-}C_3)$alkyl (especially methyl and ethyl), methoxy, trifluoromethyl, (C_1)fluoroalkoxy and halogen.

23) A further embodiment of the invention relates to compounds according to any one of embodiments 1) or 4) to 17), wherein
G represents 6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl; or

G represents a group selected from the group consisting of:

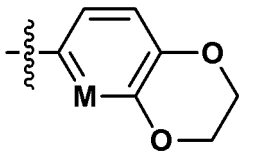
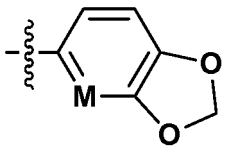
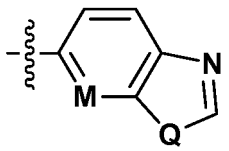
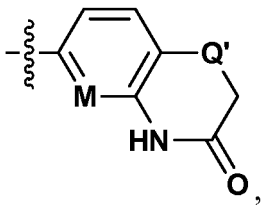

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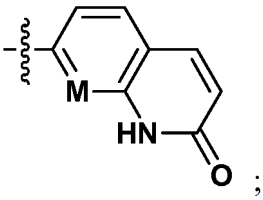
wherein

R^h represents hydrogen or fluorine;
M represents CH or N; and **Q** and **Q'** independently represent O or S.

24) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 2) or 4) to 18), wherein
G represents 6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl; or
G represents a group selected from the group consisting of:

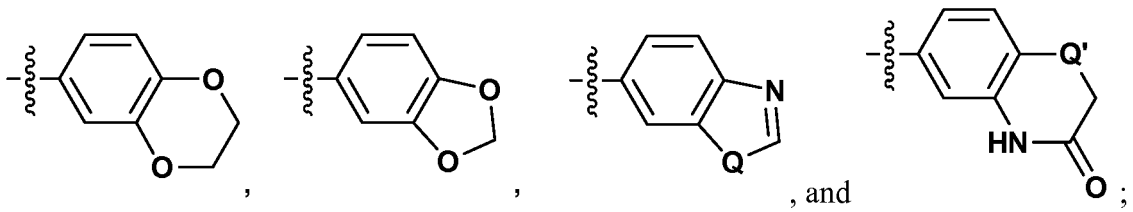

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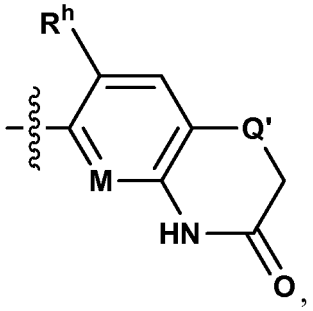
wherein
M represents CH or N; and **Q** and **Q'** independently represent O or S.

25) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 19), 23) or 24), wherein
G represents a group selected from the group consisting of:



wherein **Q** and **Q'** independently represent O or S.

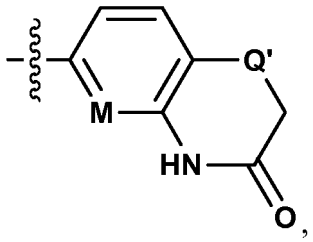
26) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 4) to 17) or 23) wherein **G** represents a fused benzene or pyridine ring of the formula



wherein

R^h represents hydrogen or fluorine;
M represents CH or N; and **Q**' represents O or S.

27) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 2), 4) to 18), 23), 24) or 26) wherein **G** represents a fused benzene or pyridine ring of the formula



wherein **M** represents CH or N; and **Q'** represents O or S.

28) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 2), 4) to 28), 23), 24), 26) or 27), wherein **M** represents CH.

29) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 2), 4) to 18), 23), 24), 26) or 27), wherein **M** represents N.

30) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 19) or 23) to 29), wherein **Q'** represents S.

31) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 19) or 23) to 29), wherein **Q'** represents O.

32) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 17), 23), 26), 28) or 30), wherein **R^h** represents hydrogen.

33) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 19), 23) to 25) or 28), wherein **Q** represents S.

34) A further embodiment of the invention relates to compounds according to any one of embodiments 1) to 18), 23) or 24), wherein **G** represents 2,3-dihydro-benzo[1,4]dioxin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]oxazin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl, 3-oxo-3,4-dihydro-2H-pyrido[3,2-b][1,4]oxazin-6-yl or 2-oxo-1,2-dihydro-quinolin-7-yl.

35) A further embodiment of the invention relates to compounds according to any one of embodiments 1), 4) to 17), 23) or 26), wherein **G** represents 3-oxo-3,4-dihydro-2*H*-benzo[1,4]oxazin-6-yl, 3-oxo-3,4-dihydro-2*H*-benzo[1,4]thiazin-6-yl, 3-oxo-3,4-dihydro-2H-pyrido[3,2-b][1,4]oxazin-6-yl, or 7-fluoro-3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl.

36) The invention also relates to compounds of formula (IN) according to embodiment 1), or pharmaceutically acceptable salts thereof, wherein the meanings of the substituents or groups are replaced by the meaning(s) given for said substituents or groups in any one of embodiments 1) to 35);
for the prevention or treatment of a bacterial infection; or
to said compounds, or pharmaceutically acceptable salts thereof, for use in the manufacture of a medicament for the prevention or treatment of a bacterial infection.

37) Preferred compounds of formula (IN) as defined in embodiment 1) are selected from:

3-(2,3-dihydro-benzo[l,4]dioxin-6-yl)-5-[4-hydroxy-4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-1-ylmethyl]-oxazolidin-2-one;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-methoxy-quinazolin-4-yl)-piperidin-4-ylmethyl]-oxazolidin-2-one;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylmethyl]-oxazolidin-2-one;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-quinazolin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
6-{5-[4-(6-methoxy-quinazolin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-trifluoromethoxy-phenyl)-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-trifluoromethoxy-phenyl)-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-phenyl-oxazolidin-2-one;
(*R*)-3-(4-bromo-3-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3,4-dimethoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(4-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-l-ylmethyl]-3-(3-trifluoromethyl-phenyl)-oxazolidin-2-one;
(*R*)-3-(3-chloro-4-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-methyl-3-trifluoromethyl-phenyl)-oxazolidin-2-one;
(*R*)-3-benzothiazol-6-yl-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(4-difluoromethoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
3-{(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-benzonitrile;
6-{(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-pyrrolidin-1-yl-phenyl)-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-methoxy-phenyl)-oxazolidin-2-one;

(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-propyl-phenyl)-oxazolidin-2-one;
(*R*)-3-(4-ethyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3,4-dimethyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3-chloro-4-methoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3,4-difluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(4-fluoro-3-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(4-bromo-3-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3-bromo-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-methoxy-3-trifluoromethyl-phenyl)-oxazolidin-2-one;
(*R*)-3-(3-dimethylamino-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-benzo[1,3]dioxol-5-yl-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3-fluoro-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*S*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*S*)-3-(3-fluoro-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
6-{(*S*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
(*S*)-3-(3-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(5-methyl-pyridin-2-yl)-oxazolidin-2-one;
5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(5-trifluoromethyl-pyridin-2-yl)-oxazolidin-2-one;
6-{(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-one;
6-{(*R*)-5-[4-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-one;
6-{(*R*)-5-[4-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
(*R*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-(4-quinolin-4-yl-piperazin-1-ylmethyl)-oxazolidin-2-one;
(*R*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-3-ylamino]-methyl}-oxazolidin-2-one;
3-(6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
3-(6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
6-{5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-pyrido[3,2-*b*][1,4]oxazin-3-one;
6-((*R*)-5-{2-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-yl]-2-oxo-ethyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
6-((*R*)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
6-((*R*)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-one;
(*R*)-3-(3-Fluoro-4-methyl-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-one;
6-((*R*)-5-{[1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
6-((*R*)-5-{[1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-one;
6-[(*R*)-5-({[1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-yl]-methyl-amino}-methyl)-2-oxo-oxazolidin-3-yl]-4*H*-benzo[1,4]thiazin-3-one;

6-{(*R*)-5-[4-hydroxy-4-(6-methoxy-quinolin-4-yl)-piperidin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
6-{(*R*)-5-[4-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-4-hydroxy-piperidin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
6-{(*R*)-5-[4-hydroxy-4-(6-methoxy-quinolin-4-yl)-piperidin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-one;
6-((*S*)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
6-((*R*)-5-{[1-(6-fluoro-quinolin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
4-(4-{[(*R*)-2-oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl)-oxazolidin-5-ylmethyl]-amino}-piperidin-1-yl)-quinoline-6-carbonitrile;
(*R*)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-3-(4-methoxy-phenyl)-oxazolidin-2-one;
(*R*)-3-(4-ethoxy-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-one; and
(*R*)-3-(4-difluoromethoxy-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-one.

[0024] The compounds of formula (IN) and/or formula ($I_{N\text{-}P1}$) according to embodiments 1) and/or 3) may contain one or more stereogenic or asymmetric centers, such as one or more asymmetric carbon atoms. The compounds of formula (IN) and/or formula ($I_{N\text{-}P1}$) may thus be present as mixtures of stereoisomers or preferably as pure stereoisomers. Mixtures of stereoisomers may be separated in a manner known to a person skilled in the art.

[0025] The relative configuration of stereoisomers is denoted as follows: for example, 6-{(*R*)-5-{[(3aR*,6aR*)-5-(6-methoxy-[1,5]naphthyridin-4-yl)-hexahydro-pyrrolo[3,4-b]pyrrol-1-yl]-methyl}-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]thiazin-3-one denominates 6-{(R)-5-{[(3aR,6aR)-5-(6-methoxy-[1,5]naphthyridin-4-yl)-hexahydro-pyrrolo[3,4-b]pyrrol-1-yl]-methyl}-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]thiazin-3-one, or 6-{(R)-5-[(3aS,6aS)-5-(6-methoxy-[1,5]naphthyridin-4-yl)-hexahydro-pyrrolo[3,4-b]pyrrol-1-yl]-methyl}-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]thiazin-3-one, or mixtures of these two stereoisomers.

[0026] Compounds of formula (IN) and/or formula ($I_{N\text{-}P1}$) according to embodiments 1) and/or 3) are suitable for the use as chemotherapeutic active compounds in human and veterinary medicine and as substances for preserving inorganic and organic materials in particular all types of organic materials for example polymers, lubricants, paints, fibres, leather, paper and wood.

[0027] These compounds according to the invention are particularly active against bacteria and bacteria-like organisms. They are therefore particularly suitable in human and veterinary medicine for the prophylaxis and chemotherapy of local and systemic infections caused by these pathogens as well as disorders related to bacterial infections comprising pneumonia, otitis media, sinusitis, bronchitis, tonsillitis, and mastoiditis related to infection by Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis, Staphylococcus aureus, Enterococcus faecalis, E. faecium, E. casseliflavus, S. epidermidis, S. haemolyticus, or Peptostreptococcus spp.; pharyngitis, rheumatic fever, and glomerulonephritis related to infection by Streptococcus pyogenes, Groups C and G streptococci, Corynebacterium diphtheriae, or Actinobacillus haemolyticum; respiratory tract infections related to infection by Mycoplasma pneumoniae, Legionella pneumophila, Streptococcus pneumoniae, Haemophilus influenzae, or Chlamydia pneumoniae; blood and tissue infections, including endocarditis and osteomyelitis, caused by S. aureus, S. haemolyticus, E. faecalis, E. faecium, E. durans, including strains resistant to known antibacterials such as, but not limited to, beta-lactams, vancomycin, aminoglycosides, quinolones, chloramphenicol, tetracyclines and macrolides; uncomplicated skin and soft tissue infections and abscesses, and puerperal fever related to infection by Staphylococcus aureus, coagulase-negative staphylococci (i.e., S. epidermidis, S. haemolyticus, etc.), Streptococcus pyogenes, Streptococcus agalactiae, Streptococcal groups C-F (minute colony streptococci), viridans streptococci, Corynebacterium minutissimum, Clostridium spp., or Bartonella henselae; uncomplicated acute urinary tract infections related to infection by Staphylococcus aureus, coagulase-negative staphylococcal species, or Enterococcus spp.; urethritis and cervicitis; sexually transmitted diseases related to infection by Chlamydia trachomatis, Haemophilus ducreyi, Treponema pallidum, Ureaplasma urealyticum, or Neiserria gonorrheae; toxin diseases related to infection by S. aureus (food poisoning and toxic shock syndrome), or Groups A, B, and C streptococci; ulcers related to infection by Helicobacter pylori; systemic febrile syndromes related to infection by Borrelia recurrentis; Lyme disease related to infection by Borrelia burgdorferi; conjunctivitis, keratitis, and dacrocystitis related to infection by Chlamydia trachomatis, Neisseria gonorrhoeae, S. aureus, S. pneumoniae, S. pyogenes, H. influenzae, or Listeria spp.; disseminated Mycobacterium avium complex (MAC) disease related to infection by Mycobacterium avium, or Mycobacterium intracellulare; infections caused by Mycobacterium tuberculosis, M. leprae, M. paratuberculosis, M. kansasii, or M. chelonei; gastroenteritis related to infection by Campylobacter jejuni; intestinal protozoa related to infection

by Cryptosporidium spp.; odontogenic infection related to infection by viridans streptococci; persistent cough related to infection by Bordetella pertussis; gas gangrene related to infection by Clostridium perfringens or Bacteroides spp.; and atherosclerosis or cardiovascular disease related to infection by Helicobacter pylori or Chlamydia pneumoniae.

[0028] Compounds of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3) are further useful for the preparation of a medicament for the treatment of infections that are mediated by bacteria such as E. coli, Klebsiella pneumoniae and other Enterobacteriaceae, Acinetobacter spp., Stenothrophomonas maltophilia, Neisseria meningitidis, Bacillus cereus, Bacillus anthracis, *Clostridium difficile,* Corynebacterium spp., Propionibacterium acnes and bacteroide spp.

[0029] Compounds of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3) are further useful to treat protozoal infections caused by Plasmodium malaria, Plasmodium falciparum, Toxoplasma gondii, Pneumocystis carinii, Trypanosoma brucei and Leishmania spp.

[0030] The present list of pathogens is to be interpreted merely as examples and in no way as limiting.

[0031] One aspect of this invention therefore relates to the use of a compound of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3), or of a pharmaceutically acceptable salt thereof, for the manufacture of a medicament for the prevention or treatment of a bacterial infection.

[0032] As well as in humans, bacterial infections can also be treated using compounds of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3) (or pharmaceutically acceptable salts thereof) in other species like pigs, ruminants, horses, dogs, cats and poultry.

[0033] The present invention also relates to pharmacologically acceptable salts and to compositions and formulations of compounds of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3).

[0034] Any reference to a compound of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3) is to be understood as referring also to the salts (and especially the pharmaceutically acceptable salts) of such compounds, as appropriate and expedient.

[0035] The term "pharmaceutically acceptable salts" refers to non-toxic, inorganic or organic acid and/or base addition salts. Reference can be made to "Salt selection for basic drugs", Int. J. Pharm. (1986), 33, 201-217.

[0036] A pharmaceutical composition according to the present invention contains at least one compound of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3) (or a pharmaceutically acceptable salt thereof) as the active agent and optionally carriers and/or diluents and/or adjuvants, and may also contain additional known antibiotics.

[0037] As mentioned above, therapeutically useful agents that contain compounds of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3), their salts and formulations thereof are also comprised in the scope of the present invention.

[0038] The compounds of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3) and their pharmaceutically acceptable salts can be used as medicaments, e.g. in the form of pharmaceutical compositions for enteral or parenteral administration.

[0039] The production of the pharmaceutical compositions can be effected in a manner which will be familiar to any person skilled in the art (see for example Remington, The Science and Practice of Pharmacy, 21st Edition (2005), Part 5, "Pharmaceutical Manufacturing" [published by Lippincott Williams & Wilkins]) by bringing the described compounds of formula (IN) or their pharmaceutically acceptable salts, optionally in combination with other therapeutically valuable substances, into a galenical administration form together with suitable, non-toxic, inert, therapeutically compatible solid or liquid carrier materials and, if desired, usual pharmaceutical adjuvants.

[0040] Another aspect of the invention concerns a a compound according to formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3), or a pharmaceutically acceptable salt thereof for use in a method for the prevention or the treatment of a bacterial infection in a patient.

[0041] Further, any preferences indicated for the compounds of formula (IN) (whether for the compounds themselves, salts thereof, compositions containing the compounds or salts thereof, uses of the compounds or salts thereof, etc.) apply mutatis mutandis to compounds of formula (I_{N-P1}).

[0042] Moreover, the compounds of formula (IN) and/or formula (I_{N-P1}) according to embodiments 1) and/or 3) may also be used for cleaning purposes, e.g. to remove pathogenic microbes and bacteria from surgical instruments or to make a room or an area aseptic. For such purposes, the compounds of formula (IN) and/or formula (I_{N-P1}) could be contained in a solution or in a spray formulation.

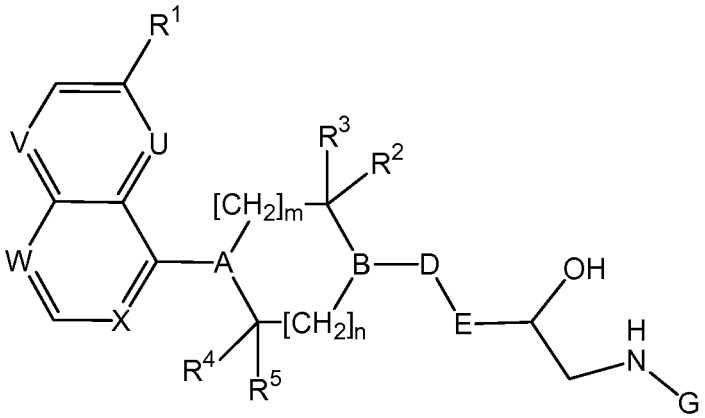
[0043] Unless used regarding temperatures, the term "about" placed before a numerical value "X" refers in the current application to an interval extending from X minus 10% of X to X plus 10% of X, and preferably to an interval extending from X minus 5% of X to X plus 5% of X. In the particular case of temperatures, the term "about" placed before a temperature "Y" refers in the current application to an interval extending from the temperature Y minus 10°C to Y plus 10°C, and preferably to an interval extending from Y minus 5 °C to Y plus 5°C. Besides, the term "room temperature" (rt) as used herein refers to a temperature of about 25°C.

PREPARATION OF COMPOUNDS OF FORMULA (I)

[0044] The compounds of formula (IN) and/or formula ($_{N-P1}$), hereafter collectively referred to as "compounds of formula (I)", can be manufactured by the methods given below, by the methods given in the examples or by analogous methods. Optimum reaction conditions may vary with the particular reactants or solvents used, but such conditions can be determined by a person skilled in the art by routine optimisation procedures.

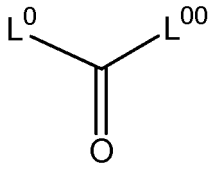
[0045] Sections a) to h) hereafter describe general methods for preparing compounds of formula (I). The preparation of elaborated intermediates and basic building blocks is described thereafter. General synthetic methods used repeatedly throughout the schemes below are referenced to and described in the end of this section. If not indicated otherwise, the generic groups or integers U, V, W, X, R^1, R^2, R^3, R^4, R^5, R^6, R^a, R^b, R^h, A, B, D, E, G, m and n are as defined for formula (I). Other abbreviations used are defined in the experimental section. In some instances the generic groups R^2, R^3, R^4, R^5, R^6, R^a, R^b, R^h, A, B, D or E might be incompatible with the assembly illustrated in the schemes below and so will require the use of protecting groups (PG). The use of protecting groups is well known in the art (see for example "Protective Groups in Organic Synthesis", T.W. Greene, P.G.M. Wuts, Wiley-Interscience, 1999). For the purposes of this discussion, it will be assumed that such protecting groups as are necessary are in place.

a) Compounds of formula (I) can be obtained by reacting a compound of formula (II)



(II)

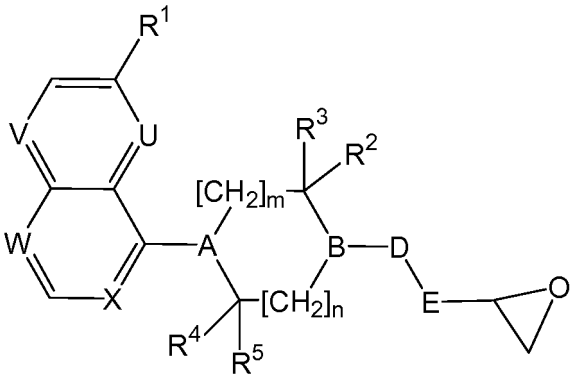
with a carbonic acid derivative of formula (III)



(III)

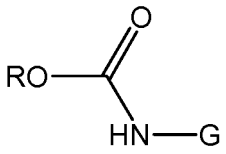
wherein L^0 and L^{00} both represent chloro, $OCCl_3$, imidazolyl or succinimidyloxy, or L^0 represents chloro and L^{00} represents $OCCl_3$. This reaction is preferably carried out in a dry aprotic solvent such as DCM or THF in presence of an organic base such as TEA or pyridine and at a temperature range between -30°C and +80°C. In case there is one or two free amino or alcohol functions on B or D, these functional groups are protected [see general synthetic method 1 and 2] prior to the reaction and the protecting groups removed thereafter [see general synthetic method 3 and 10].

b) Compounds of formula (I) can be obtained by reacting a compound of formula (IV)



(IV)

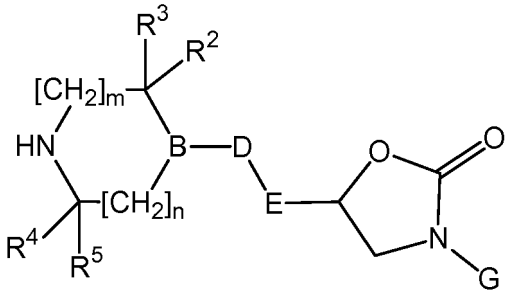
with the anion generated from compound of formula (V)



(V)

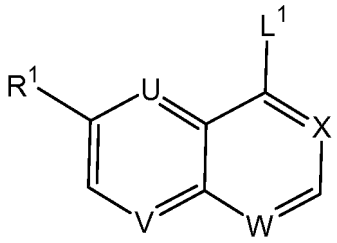
wherein R represents alkyl or benzyl, with a base such as KHMDS. This reaction is performed following [general synthetic method 4].

c) Compounds of formula (I) wherein A represents N can be obtained by reacting a compound of formula (VI)



(VI)

with a compound of formula (VII)

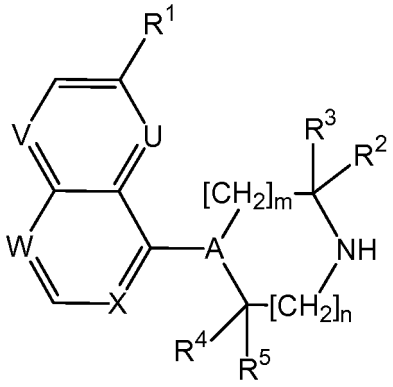


(VII)

wherein L^1 represents chloro, bromo or OTf, in a solvent such as dioxane or EtOH between about +20°C and about +120°C as described in Procedure F in the experimental part, or in presence of a catalyst as described in [general

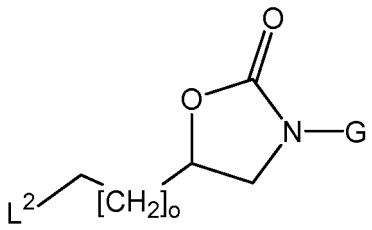
synthetic method 5].

d) Compounds of formula (I) wherein B represents N, D represents a bond, and E represents CH_2 can be obtained by coupling compounds of formula (IX)



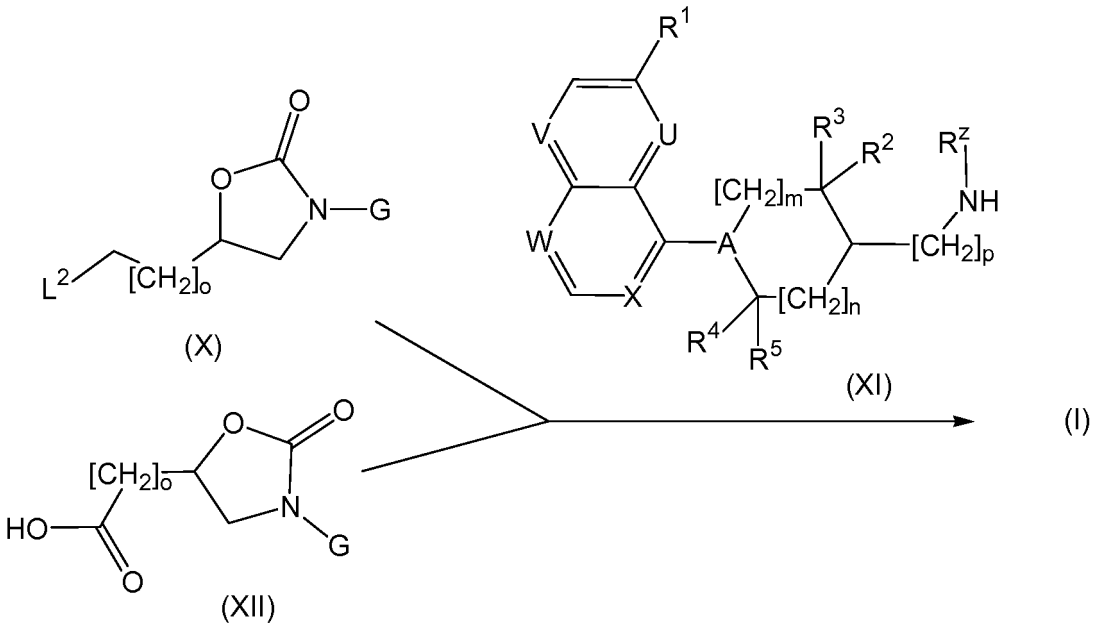
(IX)

with a compound of formula (X), wherein o represents the integer 0 or 1, and L^2 represents O-Ms, O-Tf, O-Ts, chloro, bromo, iodo or hydroxy following [general synthetic methods 7 and/or 11].



(X)

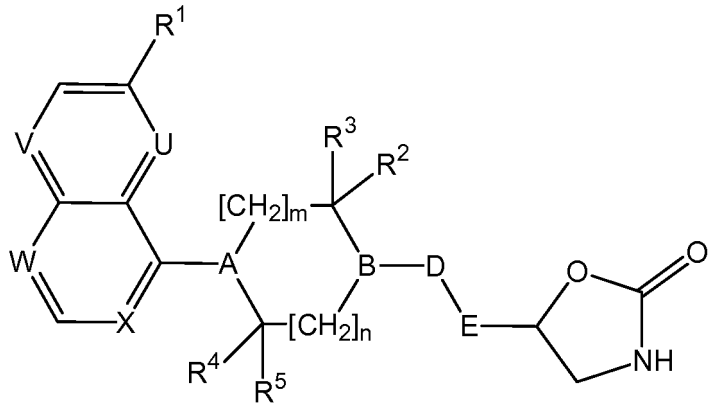
e) Compounds of formula (I) can be obtained as shown in scheme 1. Compounds of formula (I) wherein B represents CH, D represents NH or NR^b, wherein the asterisks indicate the bond which is attached to B, and E represents CH_2 can be obtained by reacting a compound of formula (XI), wherein p represents the integer 0 or 1 and R^z represents hydrogen or R^b, with a compound of formula (X), wherein L^2 is as above following [general synthetic methods 7 and/or 11], or with an acid of formula (XII) wherein o represents the integer 0 or 1 following [general synthetic method 8]. In case R^z represents hydrogen, the nitrogen atom may subsequently be further alkylated following [general synthetic method 11] or, preferably, using standard reductive amination procedures.



Scheme 1

In scheme 1, R^z represents hydrogen or R^b as defined for formula (I), o represents the integer 0 or 1 and p represents the integer 0 or 1.

f) Compounds of formula (I) can be obtained by reacting a compound of formula (IV_A)

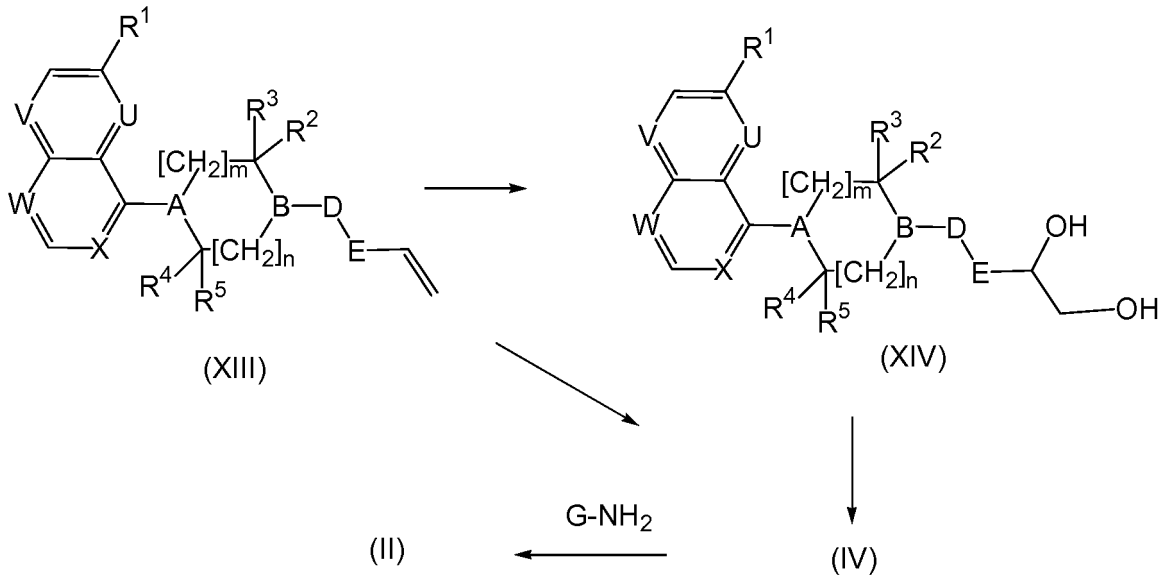


(IV_A)

with a compound of formula L^1-G, wherein L^1 represents OTf or halogen such as bromine or iodine. This reaction is performed under conditions described for the metal catalyzed N-arylation of 2-oxazolidinones or amides. In particular by using CuI and 1,1,1-tris(hydroxymethyl)ethane in presence of $CsCO_3$ (Org. Let. 2006, 8, 5609-5612), or $Pd(OAc)_2$ and DPEphos in presence of K_3PO_4. In case G represents 2-pyridinyl, the reaction is performed in presence of a NaH.

ELABORATED INTERMEDIATES

[0046] Compounds of formulae (II) and (IV) can be obtained as described in scheme 3.



Scheme 3

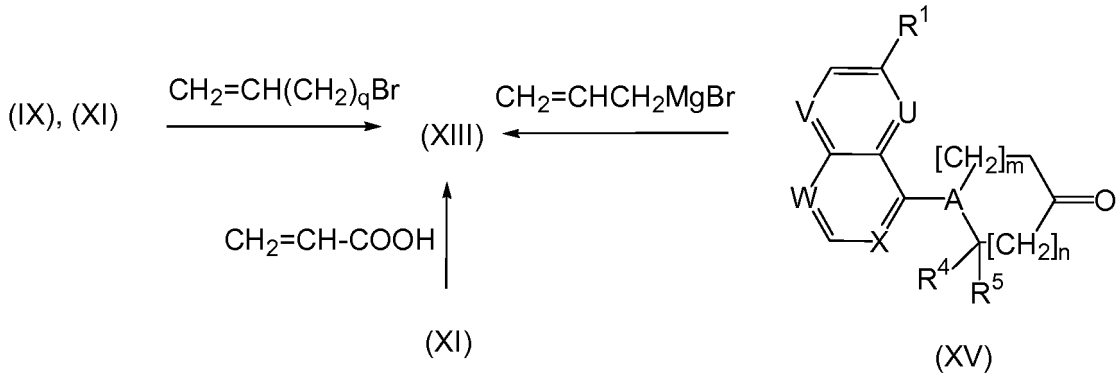
[0047] The vinyl derivatives of formula (XIII) are transformed into the corresponding epoxides of formula (IV) either through direct epoxidation of the terminal double bond with a peracide such as mCPBA or H_2O_2 in presence of an inorganic base such as NaOH, $NaHCO_3$ or urea or via cis-dihydroxylation with O_sO_4/NMO following [general synthetic method 9], or as described in Tetrahedron Lett. 1976, 23, 1973-76, followed by conversion into the corresponding epoxides after mesylation or tosylation, and ring closure under basic conditions such as K_2CO_3 or NaOMe. In case chiral epoxides are required, they can be obtained by hydrolytic kinetic resolution (HKR) catalyzed by chiral (salen)-Co(III) complex (*e.g.* [(*R*,*R*)-N,N'-bis(3,5-di-tert-butylsalicylidene)-1,2-cyclohexanediaminato(2-)]cobalt(III) of the racemic mixture of epoxides as described by Jacobsen et al in J. Am. Chem. Soc. 2002, 124, 1307-1315 and Science, 1997, 277, 936-938. Alternatively, the chiral epoxides can also be obtained from the ethylenic derivatives of formula (XIII) through either Shi chiral epoxidation using a chiral ketone as described Acc. Chem Res. 2004, 37, 488-496 or through chiral cis-dihydroxylation using AD mixtures in presence of methanesulfonamide in a water/2-methyl-2-propanol mixture as described in Chem. Rev. 1994, 94, 2483. The sense of induction relies on the chiral ligand contained in the mixture, either a dihydroquinine-based ligand in AD-mix α or a dihydroquinidine-based ligand in AD-mix β [see general synthetic method 9]

[0048] In the particular case wherein the group -D-E- represents -NH-CH_2-, the epoxide of formula (IV) can also be obtained by reacting the amines of formula (XI) with epichlorhydrin, or optionally with one of the two enantiomers of epichlorhydrin, followed by protection of the amine function with a benzyloxycarbonyl or a *tert*-butoxycarbonyl group following [general synthetic method 1], epoxide formation after basic treatment and removal of the transient amino protecting group following [general synthetic method 10].

[0049] The epoxides of formula (IV) are reacted with amines of formula G-NH_2 affording compounds of formula (II).

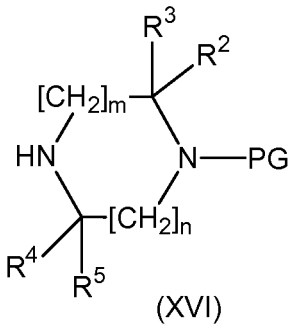
[0050] Intermediates of formula (IV_A) are obtained by reacting the epoxides of formula (IV) with sodium azide followed by hydrogenation over a noble metal catalyst such as Pd on charcoal and subsequent transformation into their corresponding carbamates with CbzCl or BOC_2O. The oxazolidinone ring is formed by subsequent reaction with NaH.

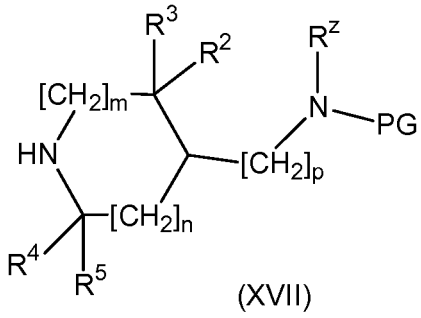
[0051] Compounds of formula (XIII) are obtained as shown in scheme 4. Compounds of formula (XIII), wherein B represents N or CH are obtained by reacting amines of formulae (IX) or (XI) with an allyl halogenide (q represents the integer 1) following [general synthetic method 11]. Compounds of formula (XIII) wherein B represents C(OH), and R^2 and R^3 represent H are obtained by reacting a ketone of formula (XV) with allyl magnesium bromide following [general synthetic method 6].



Scheme 4

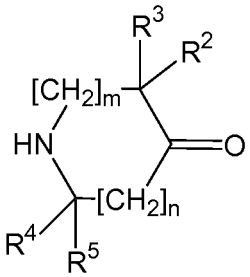
[0052] Compounds of formulae (IX) and (XI) are obtained by reacting derivatives of formula (VII) wherein L^1 represents bromine or OTf with amines of formula (XVI) or amines of formula (XVII), wherein p represents the integer 0 or 1, R^z represents hydrogen or R^b; and PG represents a nitrogen protecting group such as benzyloxycarbonyl or *tert*-butoxycarbonyl,

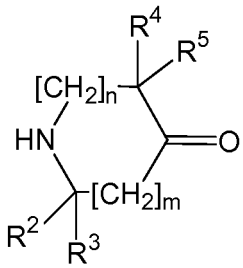

(XVI)


(XVII)

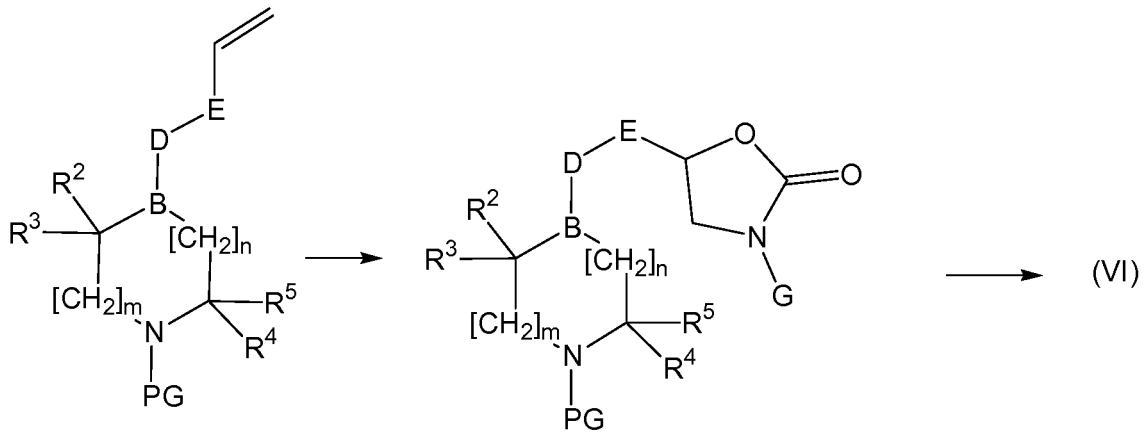
using the same methodology as described in c) followed by removal of the nitrogen protecting group following [general synthetic method 10].

[0053] Compounds of formula (XV) wherein A represents N are obtained by reacting derivatives of formula (VII) wherein L^1 represents bromine or OTf with compounds of formula (XVIII) using the same methodology as described in c). Compounds of formula (XI_A) are prepared in analogy.


(XVIII)


(XVIII')

[0054] Compounds of formula (VI) are obtained as described in scheme 5.

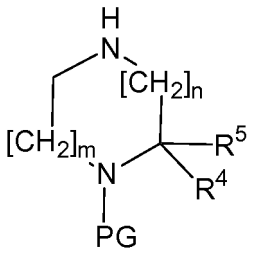


Scheme 5

[0055] The vinyl derivatives (XX), wherein PG represents a nitrogen protecting group such as benzyloxycarbonyl or *tert*-butoxycarbonyl, are transformed into the oxazolidinones (XXI) using one of the methods described in a) or b). The protecting group of compounds of formula (XXI) are removed to afford compounds of formula (VI) following [general synthetic method 10].

BASIC BUILDING BLOCKS

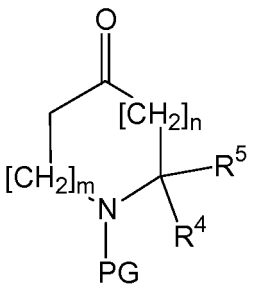
[0056] Compounds of formula (XX) wherein B represents N, D represents a bond, E represents CH_2, and R^2 and R^3 represent H are prepared by alkylation of compounds of formula (XXII)



(XXII)

wherein PG represents a nitrogen protecting group such as benzyloxycarbonyl or *tert*-butoxycarbonyl, with allyl bromide following [general synthetic method 11].

[0057] Compounds of formula (XX) wherein B represents C(OH), D represents a bond, E represents CH_2, and R^2 and R^3 each represent H are prepared by alkylation of compounds of formula (XXIII)

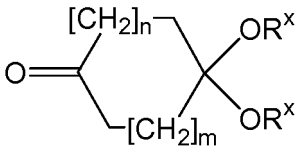


(XXIII)

wherein PG represents a nitrogen protecting group such as benzyloxycarbonyl or *tert*-butoxycarbonyl, with

CH_2=$CHCH_2MgBr$.

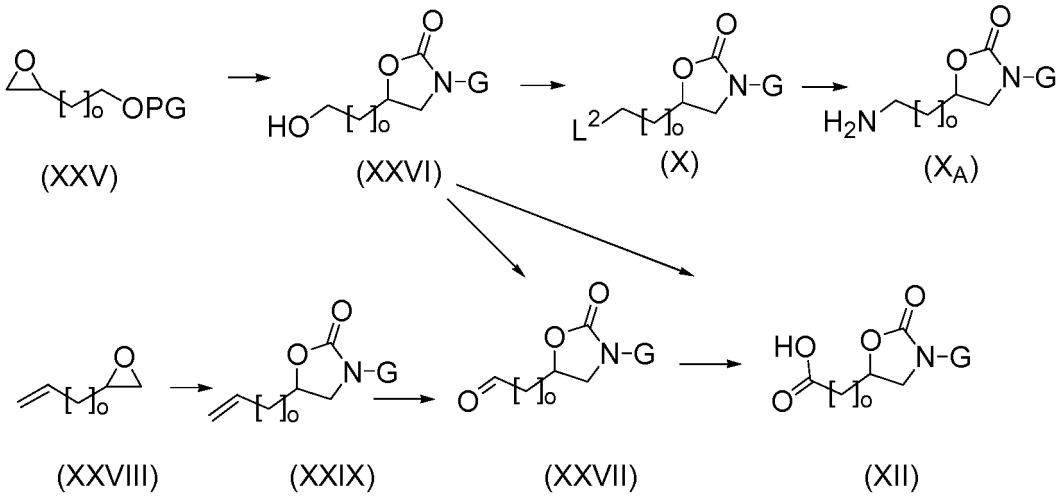
[0058] Compounds of formula (XXIV) wherein B represents N, D represents a bond and E represents CH_2 are obtained by alkylation of the compounds of formula (XVIII') with allylbromide. Compounds of formula (XXIV) wherein B represents C(OH), D represents a bond, E represents CH_2, and R^2, R^3, R^4, R^5 represent hydrogen are obtained by reaction of compounds of formula (XIX')



(XIX')

wherein both R^x represent alkyl or both R^x together form an ethane-1,2-diyl or a propane-1,3-diyl linker, with CH_2=$CHCH_2MgBr$, followed by deprotection of the ketal group following [general synthetic method 12].

[0059] Compounds of formula (X) wherein o represents the integer 0 or 1, L^2 represents O-Ms, O-Tf, O-Ts, chloro, bromo or iodo are obtained from the corresponding alcohol derivatives of formula (XXVI) following [general synthetic method 7], the latter being obtained as shown in scheme 6. Compounds of formula (X) can in turn be transformed to the corresponding amines of formula (X_A) via reaction with sodium azide and subsequent hydrogenation in presence of a noble metal catalyst. PG represents -C(O)R, wherein R represents alkyl, or a silyl protecting group such as *tert*-butyldimethylsilyl.



(XXV) (XXVI) (X) (X_A)

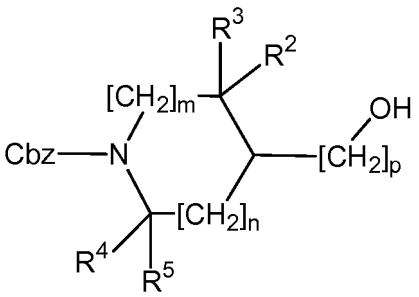
(XXVIII) (XXIX) (XXVII) (XII)

Scheme 6

[0060] The known epoxide derivatives (XXV), wherein PG represents -C(O)R and o represents the integer 0, are reacted with the anion of the carbamate of formula (V) generated by the action of a strong base such as n-BuLi between -80°C and-30°C, affording the alcohols of formula (XXVI). Alternatively, alcohols of formula (XXVI) are obtained, after final deprotection, by reaction of known epoxide derivatives (XXV), wherein PG represents a silyl protecting group and o represents the integer 1, with compounds of formula G-NH_2 according to the methods described in a) and scheme 3 above. Acids of formula (XII) can be obtained by oxidation of either the corresponding alcohol of formula (XXVI) or of the aldehyde of formula (XXVII) following [general synthetic method 13]. Aldehydes of formula (XXVII) are obtained from alkenes of formula (XXIX) after tandem cis-dihydroxylation with OsO_4 and periodic cleavage, or, alternatively, from the corresponding alcohol of formula (XXVIII) following [general synthetic method 14]. Alkenes of formula (XXIX) are obtained from the known epoxides of formula (XXVIII) after ring opening with the amines of formula G-NH_2, followed by oxazolidinone formation as described before.

[0061] Compounds of formula (XVI) wherein m and n represent the integer 1, R^2, R^3, R^4 and R^5 represent H and PG represents benzyloxycarbonyl or *tert*-butoxycarbonyl are commercially available. Compounds of formula (XVII) wherein m and n represent the integer 0, p represents the integer 1, R^2, R^3, R^4 and R^5 represent H and PG represents *tert*-butoxycarbonyl are commercially available. Compounds of formula (XVII) wherein R^z represents (C_1-C_4)alkyl are obtained from the known alcohol of formula (XXX) wherein m, n and p represent independently the integer 1 or 0 by

transformation of the alcohol into the corresponding amine by reaction with the amine of formula R^z-NH_2 wherein R^z represents (C_1-C_4)alkyl, following [general synthetic method 7], protection of the amine function with a BOC group following [general synthetic method 1] and removal of the Cbz protecting group following [general synthetic method 10].



(XXX)

[0062] Compounds of formula (XVIII) wherein m and n represent the integer 1 and R^2, R^3, R^4 and R^5 represent H are commercially available. Compounds of formula (XIX') wherein m and n represent the integer 1, and both R^a together form an ethane-1,2-diyl linker are commercially available. Compounds of formula (XXII) wherein m and n represent the integer 1, R^4 and R^5 represent H and PG represents benzyloxycarbonyl or *tert*-butoxycarbonyl are commercially available. Compounds of formula (XXIII) wherein m and n represent the integer 1, R^4 and R^5 represent H and PG represents benzyloxycarbonyl or *tert*-butoxycarbonyl are commercially available

[0063] Carbamates of formula (V) are prepared from commercially available amines G-NH_2 following [general synthetic method 1]

[0064] The required quinoline, [1,5]-naphthyridine, quinazoline and quinoxaline derivatives of formula (VII) wherein L^1 represents OTf are prepared from the corresponding derivatives of formula (VII) wherein L^1 represents OH following procedures analogous to those described in WO 2000/40554, WO 2002/008224 and WO 2004/002490.

[0065] The required quinoline, [1,5]-naphthyridine, quinazoline and quinoxaline derivatives of formula (VII) wherein L^1 represents Br are either commercially available or prepared following literature procedures. For example, compounds wherein L^1 = Br, W = N and X = V = U= CH are prepared according to WO 2003/087098, compounds wherein L^1 = Br, W = V = N and X = U = CH are prepared according to WO 2006/032466, compounds wherein L^1 = Br, X = N and U = V= W = CH or wherein L^1 = Cl, W = N and X = V= U= CH are prepared according to WO 2004/089947, and compounds wherein L^1 = Cl, V = N and X = W = U = CH are prepared according to WO 2005/019215. Compounds of formula (VII) wherein L^1 = OH are reacted with PBr_3 in DMF at 40°C and provide derivatives of formula (VII) wherein L^1 = Br.

[0066] Derivatives of formula (VII) wherein L^1 represents Li can be prepared from the corresponding derivatives of formula (VII) wherein L^1 represents Br after reaction with n-BuLi between -80°C and -30°C in a solvent such as THF or ether.

GENERAL SYNTHETIC METHODS

General synthetic method 1: amine protection

[0067] Amines are usually protected as carbamates such as Alloc, Cbz, BOC or FMOC. They are obtained by reacting the amine with allyl or benzyl chloroformate, di tert-butyl dicarbonate or FMOC-Cl in presence of a base such as NaOH, TEA, DMAP or imidazole. They can also be protected as N-benzyl derivatives by reaction with benzyl bromide or chloride in presence of a base such as sodium carbonate or TEA. Alternatively, *N*-benzyl derivatives can be obtained through reductive amination in presence of benzaldehyde and a borohydride reagent such as $NaBH_4$, $NaBH_3CN$ or $NaBH(OAc)_3$in a solvent such as MeOH, DCE or THF. Further strategies to introduce other amine protecting groups have been described in Protecting Groups in Organic Synthesis, 3rd Ed (1999), 494-653; T.W. Greene, P.G.M. Wuts; (Publisher: John Wiley and Sons, Inc., New York, N.Y.).

General synthetic method 2: protection of alcohols

[0068] The alcohols are protected as silyl ether (usually TBDMS or TBDPS). The alcohol is reacted with the required silyl chloride reagent (TBDMS-Cl or TBDPS-Cl) in presence of a base such as imidazole or TEA in a solvent such as DCM or DMF between +10°C and +40°C. Further strategies to introduce other alcohol protecting groups have been described in Protecting Groups in Organic Synthesis 3rd Ed; 1999, 23-147; T.W.Greene, P.G.M. Wuts; (Publisher: John Wiley and Sons, Inc., New York, N.Y.).

General synthetic method 3: hydroxy deprotection

[0069] The silyl ether groups are removed either using fluoride anion sources such as tetrabutyl ammonium fluoride in THF between 0°C and +40°C or HF in MeCN between 0°C and +40°C or using acidic conditions such as AcOH in THF/MeOH or HCl in MeOH. Further methods to remove the TBDMS and TBDPS groups are given in Protecting Groups in Organic Synthesis 3rd Ed; 1999, 133-139 and 142-143 respectively; T.W.Greene, P.G.M. Wuts; (Publisher: John Wiley and Sons, Inc., New York, N.Y.). Further general methods to remove alcohol protecting groups are described in Protecting Groups in Organic Synthesis 3rd Ed; 1999, 23-147; T.W.Greene, P.G.M. Wuts; (Publisher: John Wiley and Sons, Inc., New York, N.Y.).

General synthetic method 4: oxazolidinones via glycidyl esters

[0070] The carbamate of formula (V) is reacted in a dry solvent such as THF with a strong organic base such as n-BuLi between -100°C and -30°C or with lithium or potassium *tert*-butoxide or KHMDS between -100°C and -30°C. The anion is reacted at these temperatures with the required epoxide and allowed to reach room temperature.

General synthetic method 5: Buchwald Hartwig amination

[0071] The aromatic halide or the triflate is reacted with the corresponding amine in presence of a palladium catalyst such as palladium (II) acetate, in presence of a ligand such as DPEphos and in presence of a base such as K_3PO_4, between +20°C and +100°C, as described in J. Org. Chem. 2007, 72, 2232-2235.

[0072] In the Goldberg variant, the reaction is performed between an aromatic halide or triflate and a lactam in presence of CuI, an inorganic base such as K_2CO_3 or K_3PO_4 between +40°C and +110°C, as described in Tetrahedron Letters 2006, 47, 1181-86.

General synthetic method 6: addition of metal-organic reagents to ketones

[0073] Grignard reagents are prepared by reacting the halide in a dry aprotic solvent such as THF or ether with magnesium. The reaction is initiated by the addition of a trace of I_2. Lithium reagents are prepared by reacting the halide in a dry aprotic solvent such as THF or ether with a butyl-lithium reagent. The resulting metal-organic reagent is reacted with the corresponding ketone between -80°C and +60°C in a dry aprotic solvent such as THF or ether.

General synthetic method 7: substitution

[0074] The alcohol is reacted with Ms-Cl, Tf-Cl or Ts-Cl in presence of a base such as TEA in a dry aprotic solvent such as pyridine, THF or DCM between -30°C and +50°C. In the case of the trifluoromethanesulfonate or methanesulfonate, Tf_2O or Ms_2O can also be used. These sulfonates can be reacted with sodium iodide in acetone or DMF between +40°C and +120°C delivering the corresponding iodo derivatives. Once activated (either as a sulfonate or a iodo derivative), the alcohol reacts with an amine as described in [general synthetic method 11].

General synthetic method 8: amide coupling

[0075] The carboxylic acid is reacted with the amine in presence of an activating agent such as DCC, EDC, HOBT, n-propylphosphonic cyclic anhydride, HATU or di-(*N*-succinimidyl)-carbonate, in a dry aprotic solvent such as DCM, MeCN or DMF between -20°C and +60°C (see G. Benz in Comprehensive Organic Synthesis, B.M. Trost, I. Fleming, Eds; Pergamon Press: New York (1991), vol. 6, p. 381). Alternatively, the carboxylic acid can be activated by conversion into its corresponding acid chloride by reaction with oxalyl chloride or thionyl chloride neat or in a solvent like DCM between -20° and +60°C. Further activating agents can be found in Comprehensive Organic Transformations. A guide to Functional Group Preparations; 2nd Edition, R. C. Larock, Wiley-VC; New York, Chichester, Weinheim, Brisbane, Singapore, Toronto, 1999. Section nitriles, carboxylic acids and derivatives p. 1941-1949.

General synthetic method 9: cis-dihydroxylation

[0076] The diol is obtained by dihydroxylation of the corresponding ethylenic derivative using a catalytic amount of osmium tetroxide in the presence a co-oxidant such as NMO in aq. solvent such as an acetone - water or DCM - water mixture (see Cha, J.K. Chem. Rev. 1995, 95, 1761-1795). The chiral cis-diols are obtained by using AD-mix α or AD-mix β in presence of methanesulfonamide in a water/2-methyl-2 propanol mixture as described in Chem. Rev. (1994), 94, 2483. The sense of induction relies on the chiral ligand contained in the AD mixture, either a dihydroquinine-based

ligand in AD-mix α or a dihydroquinidine-based ligand in AD-mix β.

General synthetic method 10: amino deprotection

[0077] The benzyl carbamates are deprotected by hydrogenolysis over a noble catalyst (e.g. Pd/C or $Pd(OH)_2/C$). The Boc group is removed under acidic conditions such as HCl in an organic solvent such as MeOH or dioxane, or TFA neat or diluted in a solvent such DCM. Further general methods to remove amine protecting groups have been described in Protecting Groups in Organic Synthesis, 3rd Ed (1999), 494-653; T.W. Greene, P.G.M. Wuts; (Publisher: John Wiley and Sons, Inc., New York, N.Y.).

General synthetic method 11: alkylation

[0078] The amine derivative is reacted with a compound of formula alkyl-L^2, wherein L^2 represents O-Ms, O-Tf, O-Ts, Cl, Br or I, a compound of formula (X) wherein L^2 represents O-Ms, O-Tf, O-Ts, Cl, Br or I, or an allyl- or homoallyl halogenide in presence of an inorganic base such as K_2CO_3 or an organic base such as TEA in a solvent such as THF between 0°C and +80°C. Further details can be found in Comprehensive Organic Transformations. A guide to Functional Group Preparations; 2nd Edition, R. C. Larock, Wiley-VC; New York, Chichester, Weinheim, Brisbane, Singapore, Toronto, (1999). Section Amines p.779.

General synthetic method 12: ketal deprotection

[0079] The ketal is converted into its corresponding ketone under acidic conditions such as diluted aq. HCl in MeOH, diluted aq. AcOH or by using an acidic resin such as Amberlite IR120H or DOWEX 50W8 in a water-solvent mixture such as MeOH/water or THF/water.

General synthetic method 13: oxidation of alcohols/aldehydes into acids

[0080] Aldehydes can be oxidized into their corresponding acids by a variety of methods as described in Comprehensive Organic Transformations. A guide to Functionnal Group Preparations; 2nd Edition, R. C. Larock, Wiley-VC; New York, Chichester, Weinheim, Brisbane, Singapore, Toronto, 1999. Section nitriles, carboxylic acids and derivatives p.1653-1655. Among them, potassium permanganate in an acetone-water mixture (see Synthesis 1987, 85) or sodium chlorite in 2-methyl-2-propanol in presence of 2-methyl-2-butene (see Tetrahedron 1981, 37, 2091-2096) are frequently used.

[0081] Alcohols can be directly oxydized into their corresponding acids by a variety of methods as described in Comprehensive Organic Transformations. A guide to Functionnal Group Preparations; 2nd Edition, R. C. Larock, Wiley-VC; New York, Chichester, Weinheim, Brisbane, Singapore, Toronto, 1999. Section nitriles, carboxylic acids and derivatives p.1646-1648. Among them, [bis(acetoxy)iodo]benzene in presence of TEMPO, the Jones reagents (CrO_3/H_2SO_4), $NaIO_4$ in presence of $RuCl_3$, $KMnO_4$ or pyridine $H_2Cr_2O_7$ are frequently used.

General synthetic method 14: formation of aldehydes

[0082] The alcohols can be transformed into their corresponding aldehydes through oxidation under Swern (see D. Swern et al., J. Org. Chem. 1978, 43, 2480-2482) or Dess Martin (see D.B. Dess and J.C. Martin, J. Org. Chem. 1983, 48, 4155) conditions, respectively Alternatively the esters can be transformed into their corresponding aldehydes by controlled reduction with a bulky hydride reagent such as DIBAH.

General synthetic method 15: hydrolysis of ester into carboxylic acids

[0083] When the ester side chain is a linear alkyl, the hydrolysis is usually performed by treatment with an alkali hydroxide such as LiOH, KOH or NaOH in a water-dioxane or water - THF mixture between 0°C and +80°C. When the ester side chain is *tert*-butyl, the hydrolysis can also be performed in neat TFA or diluted TFA or HCl in an organic solvent such as ether or THF. When the ester side chain is the allyl group, the reaction is performed in presence of tetrakis(triphenylphosphine)palladium(0) in presence of an Π-allyl cation scavenger such as morpholine, dimedone or tributyltin hydride between 0°C and +50°C in a solvent such as THF. When the ester side chain is benzyl, the reaction is performed under hydrogen in presence of a noble metal catalyst such as Pd/C in a solvent such as MeOH, THF or EA. Further strategies to introduce other acid protecting groups and general methods to remove them have been described in Protecting Groups in Organic Synthesis 3rd Ed; 1999, 369-441; T.W.Greene, P.G.M. Wuts; (Publisher: John Wiley and Sons, Inc., New York, N.Y.).

[0084] The compounds of formula (I), (I_{P1}), (I_{CE-P1}), (I_N) and/or formula (I_{N-P1}) obtained according to the abovementioned general preparation methods may then, if desired, be converted into their salts, and notably into their pharmaceutically acceptable salts.

[0085] Whenever the compounds of formula (I), (I_{P1}), (I_{CE-P1}), (I_N) and/or formula (I_{N-P1}) are obtained in the form of mixtures of enantiomers, the enantiomers can be separated using methods known to one skilled in the art: e.g. by formation and separation of diastereomeric salts or by HPLC over a chiral stationary phase such as a Regis Whelk-O1(R,R) (10μm) column, a Daicel ChiralCel OD-H (5-10 μm) column, or a Daicel ChiralPak IA (10 μm) or AD-H (5μm) column. Typical conditions of chiral HPLC are an isocratic mixture of eluent A (EtOH, in presence or absence of an amine such as triethylamine, diethylamine) and eluent B (hexane), at a flow rate of 0.8 to 150 mL/min.

[0086] Particular embodiments of the invention are described in the following examples, which serve to illustrate the invention in more detail without limiting its scope in any way.

EXPERIMENTAL SECTION

Abbreviations (as used herein and in the description above):

[0087]

AcOH	acetic acid
AD-mix α	1,4-*bis*(dihydroquinine)phthalazine, $K_3Fe(CN)_6$, K_2CO_3 and $K_2OsO_4.2H_2O$
AD-mix β	1,4-*bis*(dihydroquinidine)phthalazine, $K_3Fe(CN)_6$, K_2CO_3 and $K_2OsO_4.2H_2O$
alloc	allyloxycarbonyl-
aq.	aqueous
BINAP	2,2'-bis(diphenylphosphino)-1,1 '-binaphthyl
BOC	*tert*-butoxycarbonyl-
BOC_2O	*tert*-butyl dicarbonate
n-BuLi	n-butyl lithium
Cbz	benzyloxycarbonyl-
CC	column chromatography over SiO_2
CDI	1,1' -carbonyldiimidazole
d	day(s)
DCM	dichloromethane
DCC	N,N'-dicyclohexylcarbodiimide
DCE	1,2-dichloroethane
DPEphos	bis(2-diphenylphosphinophenyl)ether
DHQD	dihydroquinidine
DIBAH	diisobutylaluminium hydride
DIPEA	*N,N*-diisopropylethylamine
DMA	*N,N*-dimethylacetamide
DMAP	4-dimethylaminopyridine
DMF	*N,N*-dimethylformamide
DMSO	dimethylsulfoxide
EA	ethyl acetate
eq.	equivalent(s)
ESI	Electron Spray Ionisation
Et	ethyl
ether	diethylether
EtOH	ethanol
Et_3SiH	triethylsilane
FMOC	9-fluorenylmethyloxycarbonyl-
h	hour(s)
HATU	(O-(7-azabenzotriazol-1-yl)-1,1,3,3-tetramethyl-uronium hexafluorphoshate
hex	hexane
HOBT	hydroxybenzotriazole
KHMDS	potassium bis(trimethylsilyl)amide
KOtBu	potassium *tert.* butoxide
LiOtBu	lithium *tert.* butoxide
mCPBA	m-chloroperbenzoic acid

Me	methyl
MeCN	acetonitrile
MeOH	methanol
min	minutes
Ms	methanesulfonyl-
MS	Mass Spectroscopy
Ms_2O	methansulfonic acid anhydride
MS 3A	molecular sieves (3 Å)
NaOMe	sodium methylate
NMO	*N*-methylmorpholine *N*-oxide
NMP	N-methylpyrrolidone
OAc	acetate
org.	organic
PHAL	phtalazine
rt	room temperature
sat.	saturated
TBAF	tetrabutylammonium fluoride
TBDMS	*tert*-butyldimethylsilyl-
TBDPS	*tert*-butyldiphenylsilyl-
TBME	*tert*-butyl-methyl-ether
TEA	triethylamine
TEMPO	2,2,4,4-tetramethylpiperidine 1-oxyl
Tf	trifluoromethanesulfonyl-
Tf_2O	trifluoromethanesulfonic acid anhydride
TFA	trifluoroacetic acid
THF	tetrahydrofuran
Ts	*p*-toluenesulfonyl-

[0088] All temperatures are stated in °C. Compounds are characterized by ^{1}H-NMR (300 MHz) (Varian Oxford); or by ^{1}H-NMR (400 MHz) (Bruker Advance 400). Chemical shifts are given in ppm relative to the solvent used; multiplicities: s = singlet, d = doublet, t = triplet, q = quadruplet, p = pentuplet, hex = hexet, hept = heptet, m = multiplet, br = broad, coupling constants are given in Hz. Alternatively compounds are characterized by LC-MS (Sciex API 2000 with Agilent 1100 Binary Pump and DAD, using RP-C18 based columns); by TLC (TLC-plates from Merck, Silica gel 60 F_{254}); or by melting point.

[0089] Compounds are purified by chromatography on Silica gel 60A. NH_4OH as used for CC is 25% aq. Racemates can be separated into their enantiomers as described before. Preferred conditions of chiral HPLC are: ChiralPak AD (4.6x250mm, 5μm) column, using an isocratic mixture (eg. at a ratio of 10/90) of eluent A (EtOH, in presence of diethylamine in an amount of eg. 0.1 %) and eluent B (hexane), at rt, at a flow rate of eg. 0.8 mL/min.

GENERAL PROCEDURES:

Procedure A: epoxide opening

[0090] A solution of the epoxide (1 mmol) and the amine (1 mmol) in EtOH/H_2O (9:1, 1 mL) is heated at 80°C for 12h. The volatiles are removed under reduced pressure and the residue purified by CC.

Procedure B: oxazolidinone formation with CDI

[0091] A solution of the amino alcohol (1 mmol) and CDI (1-2 eq) in THF (2 mL) is heated at 50°C until completion of the reaction. The mixture is partitioned between EA (20 mL) and water (20 mL), the org. phase washed with brine (20 mL), dried over $MgSO_4$ and concentrated.

Procedure C: Cbz-protection of amines

[0092] A mixture of amine (1 mmol), sat. aq. $NaHCO_3$ (2 mL) and acetone (2 mL) is treated drop wise with benzyl chloroformate (1.05 eq). After CO_2 evolution ceased, the mixture is partitioned between EA and sat. aq. $NaHCO_3$, the org. layer dried over $MgSO_4$ and concentrated under reduced pressure.

Procedure D: oxazolidinone formation

[0093] A solution of the 1-chloro-2-hydroxy-propan-3-yl derivative (or chlorohydrine) (0.5 mmol) and the Cbz-protected amine (0.5 mmol, prepared according to procedure C) in DMF (2 mL) is treated with LiOtBu (0.68 mL of a 2.2 M solution in THF, 3 eq). The mixture is stirred at rt until completion of reaction, diluted with EA and washed with water. The org. layer is concentrated. Purification is achieved by CC (EA/MeOH 9:1 + 1% NH_4OH).

Procedure E: BOC deprotection

[0094] The BOC protected amine (1 mmol) is dissolved in DCM (5 mL) and treated with TFA (2 mL). The mixture is stirred at rt for 1 h, concentrated *in vacuo* and taken up in DCM/aq. NH_4OH. The org. layer is washed with water, dried over $MgSO_4$ and concentrated.

Procedure F: nucleophilic aromatic substitution

[0095] A mixture of the aryl halide or the aryl triflate (1 mmol), amine (1 mmol) and DIPEA (1.2 mmol) in NMP (4 mL) was heated at 70-80°C until completion of the reaction. Water was added and the mixture was extracted with EA. The combined org. layers were washed with water (3x), brine, dried over $MgSO_4$ and concentrated under reduced pressure. The residue was purified by CC.

Procedure G: hydrogenation of Cbz-group

[0096] A suspension of the benzyl carbamate (1 mmol) in MeOH (6 mL) was hydrogenated over 5 or 10% Pd/C (200 mg) for 2h. The catalyst was filtered and the filter cake was washed thoroughly with MeOH and DCM. The filtrate was concentrated under reduced pressure.

Procedure H: alkylation of amines with mesylates

[0097] A solution of the amine (1.8-2.3 mmol) and the mesylate (1 mmol) in dry DMSO was heated to 70°C until completion of the reaction (2-5 d). After cooling water and EA were added and the phases were separated. The aq. layer was extracted two more times with EA and the combined org. layers were washed with water (3 x) and brine, dried over $MgSO_4$ and concentrated under reduced pressure. The residue was purified by CC. Alternatively the reaction can also be performed with 1 mmol amine in presence of 1.1 mmol of DIPEA.

Procedure I: alkylation of amines with iodides

[0098] A solution of amine (1 mmol), iodide (1 mmol) and DIPEA (1.1 mmol) in dry DMSO was heated to 70°C until completion of the reaction (1-3 d). After cooling water and EA were added and the phases were separated. The aq. layer was extracted two more times with EA and the combined org. layers were washed with water (3 x) and brine, dried over $MgSO_4$ and concentrated under reduced pressure. The residue was purified by CC.

Method M: Methylation via reductive amination

[0099] To a solution of amine (1 mmol) in MeOH (20 mL) and a few drops of DCE was added a 37% aqueous solution of formaldehyde (2 mmol). After 10 min, $NaBH(OAc)_3$ (3 mmol) was added and stirring was continued until completion of the reaction. The mixture was poured into 0.1M HCl to quench the reaction. The mixture was made basic by adding 25% NH_4OH and extracted with EA (2 x). The org. layers were washed with brine, dried over $MgSO_4$ and concentrated. The residue was purified by CC.

PREPARATION OF EXAMPLES

Reference Example 1: (*S*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-({[1-(6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylmethyl]-amino}-methyl)-oxazolidin-2-one

RE1 i) [1-(6-Methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylmethyl]-carbamic acid tert-butyl ester

[0100] A mixture of 8-bromo-2-methoxy-[1,5]naphthyridine (495 mg, 2.07 mmol, prepared as in WO 2006/032466) and *tert*-butyl-[(azetidin-3-yl)methyl]carbamate (405 mg, 1.05 eq) in pentanol (2 mL) was heated at 80°C overnight. The

majority of the solvent was removed *in vacuo* at elevated temperature (50-60°C). The residue was triturated with ether to form the desired intermediate as beige solid (300 mg, 42%).
MS (ESI, m/z): 345.5 [M+H$^+$].

RE1 ii) C-[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-yl]-methylamine

[0101] To a solution of intermediate *RE1 i)* (290 mg, 0.842 mmol) in DCM (5 mL) were added Et_3SiH (0.294 mL, 2.2 eq) and TFA (3 mL). The resulting solution was stirred for 30 min at rt. The solution was concentrated to dryness, then diluted with DCM and basified with aq. NH_4OH. The aq. layer was extracted twice with 9:1 DCM/MeOH. The combined org. layers were dried over Na_2SO_4, filtered and concentrated to dryness to afford the desired intermediate as yellow oil (180 mg, 88%).
MS (ESI, m/z): 245.1 [M+H$^+$].

RE1 iii) (R)-*3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-hydroxymethyl-oxazolidin-2-one*

[0102] A solution of (2,3-dihydro-benzo[1,4]dioxin-6-yl)-carbamic acid benzyl ester (3.0 g, 10.5 mmol, prepared according to procedure C in THF (60 mL) was cooled to -78°C before the drop wise addition of *n*-BuLi (5.1 mL of a 2.5 M solution in hex, 1.2 eq). The mixture was stirred at -78°C for 1 h and then warmed to -15°C. At this temperature *(R)*-glycidyl butyrate (1.98 g, 1.2 eq) was added drop wise. The mixture was stirred at rt overnight. Cs_2CO_3 (tip of a spatula) was added and the mixture heated at 40°C until complete conversion. The mixture was diluted with EA and washed with sat. NH_4Cl solution and water. The org. layer was dried over $MgSO_4$ and concentrated. CC (hex/EA 2:1 to 1:1) gave the desired intermediate as beige solid (1.09 g, 41%).
^{1}H NMR (DMSO d6) δ: 7.13 (d, J=2.5 Hz, 1H), 6.96 (dd, J=2.5, 8.9 Hz, 1H), 6.86 (d, J=8.9 Hz, 1H), 5.16 (t, J=5.8, 1H), 4.70-4.50 (m, 1H), 4.30-4.10 (m, 4H), 4.10-3.90 (m, 1H), 4.80-4.70 (m, 1H), 4.70-4.60 (m, 1H), 4.60-4.50(m, 1H).

RE1 iv) Methanesulfonic acid (R)-*3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-2-oxo-oxazolidin-5-ylmethyl ester*

[0103] A solution of intermediate *RE1 iii)* (1 g, 4 mmol) in DCM (20 mL) was cooled to 0°C. DIPEA (0.62 g, 1.2 eq) and Ms-Cl (0.502 g, 1.1 eq) were added and the mixture stirred at 0°C for 1 h. The mixture was diluted with DCM and washed with water. The org. phase was dried over $MgSO_4$ and concentrated to give the desired intermediate (1.26 g, 97%) as colourless solid, which was used in the next step without further purification.
MS (ESI, m/z): 329.8 [M+H$^+$].

RE1 v) (S)-*3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-({[1-(6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylmethyl]-amino}-methyl)-oxazolidin-2-one*

[0104] A solution of intermediate *RE1 iv)* (57 mg, 0.173 mmol) and intermediate *RE1 ii)* (85 mg, 2 eq) in dry DMSO (1.5 mL) was heated at 70°C for 3 d. After cooling to rt water was added and the mixture was extracted with EA. The combined org. layers were washed with brine, dried over $MgSO_4$ and concentrated and the residue was purified by CC (DCM-MeOH-NH_4OH 1000:50:4) to afford the title compound as colourless foam (16 mg, 19%). ^{1}H NMR ($CDCl_3$) δ: 8.33 (d, *J* = 5.3 Hz, 1 H), 8.04 (d, *J* = 9.1 Hz, 1 H), 7.07 (d, *J* = 2.6 Hz, 1 H), 7.00 (m, 2 H), 6.85 (m, 1 H), 6.21 (d, *J* = 5.3 Hz, 1 H), 4.74 (m, 1 H), 4.55 (m, 2 H), 4.25 (s, 4 H), 4.14 (m, 2 H), 3.99 (m, 4 H), 3.81 (dd, *J* = 8.8, 7.0 Hz, 1 H), 2.98 (m, 5 H).
MS (ESI, m/z): 478.3 [M+H$^+$].

Example 1: (*RS*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-methoxy-quinazolin-4-yl)-piperidin-4-ylmethyl]-oxazolidin-2-one

1 i) 4-Hydroxy-4-oxiranylmethyl-piperidine-1-carboxylic acid tert-*butyl ester*

[0105] A solution of 4-allyl-4-hydroxy-piperidine-1-carboxylic acid tert-butyl ester (3.1g, 12.8 mmol, prepared according to J. Comb. Chem. 2002, 4, 125) in DCM and 0.3 M phosphate buffer (pH 8, 150 mL) was treated with mCPBA (3.5 g, 1.1 eq, 70%) and the mixture vigorously stirred at rt overnight. Further 3.5 g of mCPBA were added. After a total of 24 h, the phases were separated, the org. phase dried over $MgSO_4$ and concentrated. CC (hex/EA 2:1to 1:1to EA) gave the desired intermediate as colourless oil (0.88 g, 26%).
^{1}H NMR ($CDCl_3$) δ: 3.90-3.70 (m, 2H), 3.30-3.10 (m, 3H), 2.83 (dd, *J*=4.1, 4.9 Hz, 1H), 2.51 (dd, J=2.7, 4.9 Hz, 1H), 1.89 (dd, J=3.8, 14.5 Hz, 1H), 1.80-1.40 (m, 4H), 1.47 (s, 9H).

1 ii) (RS)-4-[3-(2,3-Dihydro-benzo[1,4]dioxin-6-ylamino)-2-hydroxy-propyl]-4-hydroxy-piperidine-1-carboxylic acid tert-butyl ester

[0106] According to procedure A starting from intermediate *1 i)* (0.88 g, 3.4 mmol) and 2,3-dihydro-benzo[1,4]dioxin-6-ylamine (517 mg, 3.4 mmol) the desired intermediate was isolated after CC (hex/EA 2:1 to 1:1) as colourless oil (1.12 g, 80%)
MS (ESI, m/z): 408.9 [M+H$^+$].

1 iii) (RS)-4-[3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-2-oxo-oxazolidin-5-ylmethyl]-4-hydroxy-piperidine-1-carboxylic acid tert-butyl ester

[0107] A solution of intermediate *1 ii)* (1.13 g, 3 mmol) in DCM (50 mL) at 0°C was treated with TEA (1.35 mL, 3 eq) and a solution of triphosgene (0.335 g, 0.3 eq) in DCM (5 mL). The mixture was stirred at rt for 2 h. The mixture was partitioned between DCM and sat. aq. $NaHCO_3$ solution, the org. phase was dried over $MgSO_4$ and concentrated. CC (hex/EA 2:1) gave the desired intermediate (0.42 g, 30%) as colourless foam.
MS (ESI, m/z): 434.9 [M+H$^+$].

1 iv) (RS)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-(4-hydroxy-piperidin-4-ylmethyl)-oxazolidin-2-one

[0108] According to procedure E and starting from intermediate 1 iii) (0.422 g, 0.97 mmol) the desired intermediate was isolated as beige foam (0.24 g, 75%).
MS (ESI, m/z): 334.8 [M+H$^+$].

1 v) (RS)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-methoxy-quinazolin-4-yl)-piperidin-4-ylmethyl]-oxazolidin-2-one

[0109] A mixture of intermediate *1 iv)* (0.12 g, 0.35 mmol) and 4-chloro-6-methoxy-quinazoline (0.07 g, 0.35 mmol) and DIPEA (0.123 mL, 2 eq) in *i*-PrOH/DMA (1:1, 3 mL) was heated in a sealed flask for 2 h at 100°C. The mixture was cooled to rt, poured into water and extracted with EA. The org. extracts were washed with brine, dried over $MgSO_4$ and concentrated. CC (DCM/MeOH 19:1) gave the title compound (0.07 g, 40%) as beige foam.
^{1}H NMR (DMSO d6) δ: 8.55 (s, 1H), 7.75 (d, *J*=9.1 Hz, 1H), 7.49 (dd, *J*=2.8, 9.1 Hz, 1H), 7.22 (d, *J*=2.8 Hz, 1H), 7.11 (d, *J*=2.6 Hz, 1H), 6.97 (dd, *J*=2.6, 8.8 Hz, 1H), 6.85 (d, *J*=8.8 Hz, 1H), 5.0-4.8 (m, 1H), 4.72 (s, 1H), 4.30-4.05 (m, 5H), 4.00-3.90 (m, 5H), 3.80-3.60 (m, 1H), 3.6-3.40 (m, 2H), 2.20-1.60 (m, 6H).
MS (ESI, m/z): 492.6 [M+H$^+$].

Example 2: (*RS*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylmethyl]-oxazolidin-2-one

[0110] The title compound was obtained starting from intermediate *1 iv)* (0.12 g, 0.35 mmol) and 8-bromo-2-methoxy-[1,5]naphthyridine (0.07 g, 1 eq) and following the procedure of example 4 *step v)* as beige foam (30 mg, 17%).
MS (ESI, m/z): 492.6 [M+H$^+$].

Example 3: (*RS*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-quinazolin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one

3 i) 6-Methoxy-4-piperazin-1-yl-quinazoline

[0111] Piperazine (1.1 g, 12.8 mmol) was added to a solution of 4-chloro-6-methoxy-quinazoline (0.5 g, 2.6 mmol) in DMF (5 mL). The mixture was stirred at rt for 1 h, partitioned between chloroform and aq. ammonia. The org. phase was washed with water, dried over $MgSO_4$ and concentrated. Purification by CC (DCM/MeOH 19:1 +0.5% NH_4OH) gave the desired intermediate (0.57 g, 91 %) as yellow oil.
^{1}H NMR ($CDCl_3$) δ: 8.73 (s, 1H), 7.86 (d, *J*=9.2 Hz, 1H), 7.44 (dd, *J*=2.8, 9.2 Hz, 1H), 7.17 (d, *J*=2.8 Hz, 1H), 3.94 (s, 3H), 3.75-3.70 (m, 4H), 3.20-3.10 (m, 4H).
MS (ESI, m/z): 245.0 [M+H$^+$].

3 ii) (RS)-1-Chloro-3-[4-(6-methoxy-quinazolin-4-yl)-piperazin-1-yl]-propan-2-ol

[0112] A solution of intermediate *3 i)* (0.57 g, 2.3 mmol) in DCM (10 mL) was treated with TEA (0.32 mL, 1 eq) and

epichlorohydrin (0.18 mL, 1 eq). The mixture was stirred at rt over night. Further epichlorohydrin (0.18 mL) was added and the mixture stirred at 40°C for 24 h. The mixture was partitioned between DCM and aq. NH_4OH, the org. phase dried over $MgSO_4$ and concentrated. Purification by CC (DCM/MeOH 19:1 +0.5% NH_4OH) gave the desired intermediate (0.4 g, 51 %) as yellow oil.
MS (ESI, m/z): 337.0 [M+H$^+$].

3 iii) (RS)-1-(2,3-Dihydro-benzo[1,4]dioxin-6-ylamino)-3-[4-(6-methoxy-quinazolin-4-yl)-piperazin-1-yl]-propan-2-ol

[0113] According to procedure A starting from intermediate *3 ii)* (0.2 g, 0.59 mmol) and 2,3-dihydro-benzo[1,4]dioxin-6-ylamine (0.09 g, 0.59 mmol) the desired intermediate was obtained after CC (DCM/MeOH 19:1 +0.5% NH_4OH) as brownish oil (0.1 g, 38%).
MS (ESI, m/z): 451.9 [M+H$^+$].

3 iv) (RS)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-quinazolin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one

[0114] According to procedure B starting from *intermediate 3 iii)* (0.1 g, 0.22 mmol) the title compound was obtained after CC (DCM/MeOH 19:1 +0.5% NH_4OH) as brownish oil (0.09 g, 85%).
MS (ESI, m/z): 477.8 [M+H$^+$].

Example 4: (*RS*)-6-{5-[4-(6-Methoxy-quinazolin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]thiazin-3-one

4 i) (RS)-6-{2-Hydroxy-3-[4-(6-methoxy-quinazolin-4-yl)-piperazin-1-yl]-propylamino}-4H-benzo[1,4]thiazin-3-one

[0115] A solution of intermediate *3 ii)* (0.7 g, 2.08 mmol) and 6-amino-4H-benzo[1,4]thiazin-3-one (0.375 g, 2.08 mmol) and TEA (0.3 mL, 1 eq) in EtOH (10 mL) was heated at 80°C over night. The mixture was concentrated and partitioned between chloroform and aq. ammonia. The org. phase was dried over $MgSO_4$ and concentrated. The residue was crystallized from EA/ether to give the desired intermediate (0.31 g, 31%) as browish solid.
MS (ESI, m/z): 481.2 [M+H$^+$].

4 ii) (RS)-6-{5-[4-(6-Methoxy-quinazolin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]thiazin-3-one

[0116] A solution of intermediate *4 i)* (0.31 g, 0.65 mmol) in pyridine (5 mL) at 0°C was treated with triphosgene (0.19 g, 1 eq). The mixture was stirred at 0°C for 30 min and at rt for 4 h. The mixture was diluted with EA (30 mL) and washed with water (5 x 20 mL), dried over $MgSO_4$ and concentrated. Purification by CC (DCM/MeOH 19:1 +0.5% NH_4OH) gave the title compound as brownish solid (0.019 g, 6%).
MS (ESI, m/z): 506.6 [M+H$^+$].

Example 5: (*RS*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one

5 i) 2-Methoxy-8-piperazin-1-yl-[1,5]naphthyridine

[0117] A solution of 8-bromo-2-methoxy-[1,5]naphthyridine (4.78 g, 20 mmol, prepared as in WO 2006/032466) and piperazine (8.6 g, 100 mmol) in 1-pentanol (20 mL) was heated at 80°C over night. The mixture was cooled and the precipitate filtered off. The filtrate was diluted with EA (100 mL) and washed with water (20 mL). The aq. phase contains some product, which was extracted with DCM/MeOH 9:1 (3 x 30 mL). The org. phases were combined, dried over $MgSO_4$ and concentrated under reduced pressure. The residue was purified by CC (EA/MeOH 4:1 to MeOH) to give the desired intermediate (4.7 g, 96%) as yellow oil.
^{1}H NMR (DMSO d6) δ: 8.43 (d, *J*=5.3 Hz, 1H), 8.11 (d, *J*=9.1 Hz, 1H), 7.14 (d, *J*=9.1 Hz, 1H), 6.88 (d, *J*=5.3 Hz, 1H), 3.95 (s, 3H), 3.40-3.60 (m, 4H), 2.90-3.00 (m, 4H).
MS (ESI, m/z): 245.2 [M+H$^+$].

5 ii) (RS)-1-Chloro-3-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-yl]-propan-2-ol

[0118] Starting from intermediate *5 i)* (0.43 g, 1.76 mmol) and following the procedures from example 3, *step ii)* the desired intermediate was isolated as yellow oil (0.24 g, 40%).

MS (ESI, m/z): 336.8 [M+H$^+$].

5 iii) (RS)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one

[0119] In analogy to Example 3, *steps iii)* and *iv)* the title compound was obtained starting from intermediate *8 ii)* (0.24 g) as colourless foam (0.14 g).
^{1}H NMR ($CDCl_3$) δ: 8.54 (d, *J*=5.1, 1H), 8.15 (d, *J*=9.1 Hz, 1H), 7.1-7.0 (m, 3H), 6.9-6.8 (m, 2H), 5.90-5.75 (m, 1H), 4.3-4.20 (m, 4H), 4.05 (s, 3H), 4.10-4.00 (m, 1H), 4.90-4.80 (m, 1H), 4.80-4.60 (m, 4H), 3.00-2.80 (m, 6H).
MS (ESI, m/z): 478.2 [M+H$^+$].

Example 6: (*R*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one

6 i) (*R*)-*1-Chloro-3-*[*4-*(*6-methoxy-*[*1,5*]*naphthyridin-4-yl*)*-piperazin-1-yl*]*-propan-2-ol*

[0120] A solution of intermediate *5 i)* (4.7 g, 19 mmol) in dry MeOH (100 mL) was treated with $MgSO_4$ (anhydrous, 5 g) and *(R)*-epichlorohydrin (3.8 mL, 2.5 eq). The mixture was stirred at 35°C over night, filtered over Celite and concentrated *in vacuo*. The residue was taken up in DCM and washed with water, dried over $MgSO_4$ and concentrated. The product was purified by CC (EA/MeOH 9:1 +1% NH_4OH) to give 4.8 g (75%) of the desired intermediate as yellowish oil.
MS (ESI, m/z): 337.4 [M+H$^+$].

*6 ii) (5*R*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one*

[0121] According to procedure D starting from intermediate *6 i)* (0.17 g, 0.5 mmol) and (2,3-dihydro-benzo[1,4]dioxin-6-yl)-carbamic acid benzyl ester (0.143 g, 0.5 mmol) the title compound was obtained as colourless foam (0.13 g, 54%).
^{1}H NMR ($CDCl_3$) δ: 8.54 (d, *J*=5.1, 1H), 8.15 (d, *J*=9.1 Hz, 1H), 7.1-7.0 (m, 3H), 6.9-6.8 (m, 2H), 5.90-5.75 (m, 1H), 4.3-4.20 (m, 4H), 4.05 (s, 3H), 4.10-4.00 (m, 1H), 4.90-4.80 (m, 1H), 4.80-4.60 (m, 4H), 3.00-2.80 (m, 6H).
MS (ESI, m/z): 478.2 [M+H$^+$].

[0122] The following examples were prepared from intermediate *8i)* using the appropriate configurational isomer of epichlorohydrin and the appropriate carbamic acid benzyl ester in analogy to Example 9:

Example	Chemical name	Yield	MS (ESI) [M+H$^+$]
7	*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-trifluoromethoxy-phenyl)-oxazolidin-2-one	24%	503.9
8	*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-trifluoromethoxy-phenyl)-oxazolidin-2-one	51%	503.9
9	*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-phenyl-oxazolidin-2-one	64%	420.3
10	*(R)*-3-(4-Bromo-3-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	51%	518.2
11	*(R)*-3-(3,4-Dimethoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	56%	480.1
12	*(R)*-3-(4-Fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	41%	438.4
13	*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-trifluoromethyl-phenyl)-oxazolidin-2-one	63%	488.3
14	*(R)*-3-(3-Chloro-4-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	39%	472.5

(continued)

Example	Chemical name	Yield	MS (ESI) [M+H+]
15	*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-methyl-3-trifluoromethyl-phenyl)-oxazolidin-2-one	29%	502.1
16	*(R)*-3-Benzothiazol-6-yl-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	27%	477.2
17	*(R)*-3-(4-Difluoromethoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	42%	486.1
18	3-{*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-benzonitrile	29%	445.1
19	6-{*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one	11%	507.2
20	*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-pyrrolidin-1-yl-phenyl)-oxazolidin-2-one	44%	489.4
21	*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-methoxy-phenyl)-oxazolidin-2-one	52%	450.5
22	*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-propyl-phenyl)-oxazolidin-2-one	48%	462.3
23	*(R)*-3-(4-Ethyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	60%	448.1
24	*(R)*-3-(3,4-Dimethyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	62%	448.4
25	*(R)*-3-(3-Chloro-4-methoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	41%	483.9
26	*(R)*-3-(3,4-Difluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	43%	456
27	*(R)*-3-(4-Fluoro-3-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	60%	452.2
28	*(R)*-3-(4-Bromo-3-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	48%	514
29	*(R)*-3-(3-Bromo-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	52%	514.2
30	*(R)*-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-methoxy-3-trifluoromethyl-phenyl)-oxazolidin-2-one	44%	518.3
31	*(R)*-3-(3-Dimethylamino-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	44%	463.3
32	*(R)*-3-Benzo[1,3]dioxol-5-yl-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	53%	464.3
33	*(R)*-3-(3-Fluoro-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	58%	452.2
34	*(S)*-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	34%	478.0
35	*(S)*-3-(3-Fluoro-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	22%	452.2

(continued)

Example	Chemical name	Yield	MS (ESI) [M+H+]
36	6-{(S)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]thiazin-3-one	11%	507.1
37	(*S*)-3-(3-Fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one	25%	438.3

Example 38: (*RS*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(5-methyl-pyridin-2-yl)-oxazolidin-2-one

38 i) (RS)-Oxiranylmethyl-carbamic acid benzyl ester

[0123] A solution of allyl-carbamic acid benzyl ester (9.6g, 50 mmol) in DCM (250 mL) was treated with mCPBA (11.55 g, 50 mmol, 75% purity) and the mixture was stirred at rt for 4 h. The pH of the mixture was adjusted to 9 by addition of 1 M aq. NaOH. The phases were separated and the org. phase dried over $MgSO_4$ and concentrated. The residue was purified by CC (hex/EA 2:1) to give the desired intermediate (7.4 g, 71% yield) as a colourless oil. ^{1}H NMR ($CDCl_3$) δ: 7.35 (m, 5 H), 5.11 (s, 2 H), 4.97 (s, 1 H), 3.62 (m, 1 H), 3.27 (m, 1 H), 3.09 (m, 1 H), 2.78 (t, *J* = 4.4 Hz, 1 H), 2.59 (dd, *J* = 4.4, 2.6 Hz, 1 H).

38 ii) (RS)-{2-Hydroxy-3-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-yl]-propyl}-carbamic acid benzyl ester

[0124] A solution of intermediate *5 i)* (1.22 g, 5 mmol) and intermediate *38 i)* (1.03 g, 5 mmol) in EtOH/H_2O (9:1, 30 ml) was heated at 80°C overnight. The mixture was concentrated *in vacuo* and purified by CC (EA/MeOH 9:1) to give the desired intermediate (1.72 g, 76% yield) as a yellowish foam.
^{1}H NMR ($CDCl_3$) δ: 8.54 (d, *J* = 5.0 Hz, 1 H), 8.15 (d, *J* = 9.1 Hz, 1 H), 7.35 (m, 5 H), 7.07 (d, *J* = 9.1 Hz, 1 H), 6.82 (d, *J* = 5.3 Hz, 1 H), 5.25 (dd, *J* = 1.8, 0.6 Hz, 1 H), 5.12 (s, 2 H), 4.02 (s, 3 H), 3.88 (m, 1 H), 3.66 (m, 5 H), 3.18 (m, 1 H), 2.94 (m, 2 H), 2.70 (m, 2 H), 2.47 (m, 2 H).
MS (ESI, m/z): 452.3 [M+H+].

38 iii) (RS)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one

[0125] A solution of intermediate *38 ii)* (1.6 g, 3.5 mmol) in DMF (20 mL) was treated with NaH dispersion (0.17 g, 1 eq., 50%). The mixture was stirred at rt for 1.5 h, diluted with water and the pH was adjusted to 5 by addition of 1M aq. HCl. The aq. phase was extracted several times with EA and DCM. The combined org. layers were dried over $MgSO_4$ and concentrated. The residue was triturated with ether and filtered to give the desired intermediate (0.98 g, 80% yield) as a colourless solid.
MS (ESI, m/z): 344.5 [M+H+].

38 iv) (RS)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(5-methyl-pyridin-2-yl)-oxazolidin-2-one

[0126] A mixture of intermediate *38 iii)* (0.1 g, 0.29 mmol), Cs_2CO_3 (0.116 g), tris(dibenzylidenacetone)dipalladium (0) chloroform complex (5.2 mg) and (BINAP) (13 mg) in dioxane (4.5 mL) was sonicated for 10 min. The mixture turned from red to orange. 2-Bromo-5-methylpyridine (0.05 g, 0.29 mmol) was added and the mixture heated at 100°C over night. The mixture was cooled and partitioned between water and EA. The org. extracts were washed with sat. NH_4Cl solution, dried over $MgSO_4$ and concentrated. The residue was triturated with ether and filtered to give the title compound (0.053 g, 42% yield) as a reddish solid.
^{1}H NMR ($CDCl_3$) δ: 8.54 (d, *J* = 5.0 Hz, 1 H), 8.14 (m, 3 H), 7.53 (m, 1 H), 7.07 (d, *J* = 9.1 Hz, 1 H), 6.83 (d, *J* = 5.3 Hz, 1 H), 4.85 (m, 1 H), 4.35 (m, 1 H), 4.03 (m, 4 H), 3.68 (m, 4 H), 2.90 (m, 6 H), 2.30 (s, 3 H).
MS (ESI, m/z): 435.4 [M+H+].

Example 39: (*RS*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(5-trifluoromethyl-pyridin-2-yl)-oxazolidin-2-one

[0127] A solution of intermediate 38 *iii)* (0.1 g, 0.29 mmol) and 2-chloro-5-trifluoromethylpyridine (0.053 g, 0.29 mmol) in DMF (1.5 mL) was treated with NaH dispersion (0.013 g, 1 eq, 50%). The mixture was stirred at rt for 1 h and heated at 60°C for 3.5 h. The mixture was cooled and partitioned between water and EA. The org. extracts were dried over $MgSO_4$ and concentrated. The residue was purified by purified by CC (EA/MeOH 9:1 +1% NH_4OH) to give the title compound (0.03 g, 21 % yield) as a yellowish oil.
^1H NMR ($CDCl_3$) δ: 8.60 (m, 1 H), 8.54 (m, 1 H), 8.39 (m, 1 H), 8.16 (d, *J* = 8.8 Hz, 1 H), 7.92 (m, 1 H), 7.08 (d, *J* = 9.1 Hz, 1 H), 6.83 (m, 1 H), 4.89 (m, 1 H), 4.40 (m, 1 H), 4.09 (m, 1 H), 4.04 (m, 3 H), 3.69 (m, 4 H), 2.90 (m, 8 H).
MS (ESI, m/z): 489.2 [$M+H^+$].

Reference Example 2: 6-((*R*)-5-{[1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-one

RE2.i) [1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-yl]-carbamic acid benzyl ester

[0128] An oven-dried vial was charged with 8-bromo-7-fluoro-2-methoxy-[1,5]naphthyridine (commercial; 2.0 g, 7.78 mmol), palladium(II)acetate (70 mg, 0.31 mmol), DPEphos (335 mg, 0.62 mmol), K_3PO_4 (4.13 g, 19.45 mmol) and azetidin-3-yl-carbamic acid benzyl ester (1.68 g, 8.17 mmol). The resulting mixture was purged with argon for several min. Dioxane (25 mL) was then added via syringe and the resulting suspension was purged with argon for 3 min. The mixture was then heated at 85 °C overnight. The solvent was removed *in vacuo* and the residue was extracted with EA/water. The org. layer was washed with brine, dried over $MgSO_4$ and concentrated. To the resulting solid TBME and a few drops of DCM and MeOH were added and the mixture was sonicated for 5 min and filtered to afford the title intermediate as a beige solid (2.53 g, 85%).
MS (ESI, m/z): 338.1 [$M+H^+$].

RE2.ii) 1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylamine

[0129] According to procedure G and starting from intermediate *RE2. i),* the desired intermediate was isolated as a colorless solid (1.13 g, 70%).
MS (ESI, m/z): 249.5 [$M+H^+$].

RE2.iii) 6-[(S)-3-(tert-Butyl-dimethyl-silanyloxy)-2-hydroxy-propylamino]-4H-benzo[1,4]oxazin-3-one

[0130] To a solution of *tert*-butyl-dimethyl-((*S*)-1-oxiranylmethoxy)-silane (commercial; 13.0 g, 69 mmol) in MeCN (220 mL) was added $LiClO_4$ (22 g, 207 mmol). 6-Amino-4*H*-benzo[1,4]oxazin-3-one (commercial;11.45 g, 64 mmol) was added and the mixture was stirred at 50°C for 6h. The solvent was removed *in vacuo* and the residue was purified by CC (DCM/MeOH/NH_4OH 1000/25/2 ->1000/100/2) to afford the title compound as a pale brown foam (11.16 g, 44%).
MS (ESI, m/z): 353.3 [$M+H^+$].

RE2.iv) 6-[(S)-5-(tert-Butyl-dimethyl-silanyloxymethyl)-2-oxo-oxazolidin-3-yl]-4H-benzo[1,4]oxazin-3-one

[0131] A solution of intermediate *RE2.iii)* (11.16 g, 30 mmol) and CDI (5.57 g, 33 mmol) in THF (130 mL) was heated at 50°C for 2h; the mixture was concentrated *in vacuo* and partitioned between EA and water. Some crystallized product was filtered and washed with H_2O and EA to give 5.21 g. The org. layer was washed with brine, dried over $MgSO_4$ and concentrated under reduced pressure. The residue was purified by purified by CC (DCM/MeOH 1000:50:4) to give additional 2.28 g as a colorless solid (7.49 g, 63%).
MS (ESI, m/z): 379.2 [$M+H^+$].

RE2.v) 6-((S)-5-Hydroxymethyl-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]oxazin-3-one

[0132] A suspension of intermediate *RE2.iv)* (11.49 g, 29.1 mmol) in THF (30 mL) was treated with TBAF (1M in THF, 29.1 mL). The yellow solution was stirred at 0°C for 3h and then partitioned between water and EA. Some crystallized product was filtered and washed with H_2O and EA to give 6.49 g. The aq. phase was extracted with EA (3x). The combined org. layers were washed with brine, dried over $MgSO_4$, filtered and concentrated under reduced pressure. The crude product was triturated with EA to give 1.23g (overall 7.72 g, 95% as an off-white solid).
MS (ESI, m/z): 265.5 [$M+H^+$].

RE2.vi) Methanesulfonic acid (S)-2-oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]oxazin-6-yl)-oxazolidin-5-ylmethyl ester

[0133] In analogy to the preparation of intermediate *RE1. iv),* the title compound was obtained from intermediate *RE2.v* as an off-white solid (1.40 g, 44%).
^{1}H NMR (DMSO-d6) δ: 10.72 (s, 1 H), 7.29 (dd, *J* = 2.1, 0.6 Hz, 1 H), 6.94 (m, 2 H), 4.95 (m, 1 H), 4.52 (s, 2 H), 4.49 (m, 2 H), 4.11 (t, *J* = 9.1 Hz, 1 H), 3.73 (m, 2 H), 3.23 (s, 3 H).
MS (ESI, m/z): 343.2 [M+H$^+$].

RE2.vii) 6-((R)-5-{[1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]oxazin-3-one

[0134] According to procedure H and starting from intermediates *RE2.ii)* and *RE2.vi),* the title compound was isolated as a pale yellow solid (49 mg, 28%).
MS (ESI, m/z): 495.1 [M+H$^+$].

Reference Example 3: (*R*)-5-1[1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylamino]-methyl}-3-(3-fluoro-4-methyl-phenyl)-oxazolidin-2-one

RE3.i) (S)-3-(3-Fluoro-4-methyl-phenyl)-5-hydroxymethyl-oxazolidin-2-one

[0135] Starting from (3-fluoro-4-methyl-phenyl)-carbamic acid benzyl ester (prepared from 3-fluoro-4-methyl-aniline and CbzCl according to procedure C) and (S)-glycidyl butyrate and following the procedure described for the preparation of intermediate *RE1.iii)* (procedure D), the title compound was obtained as a yellow solid (4.16 g, 65%).
MS (ESI, m/z): 226.0 [M+H$^+$].

RE3.ii) Methanesulfonic acid (S)-3-(3-fluoro-4-methyl-phenyl)-2-oxo-oxazolidin-5-ylmethyl ester

[0136] In analogy to Reference Example RE1.iv), the title compound was obtained from intermediate *RE3.i* and Ms-Cl as a yellow solid (1.62 g, 100%).
^{1}H NMR (DMSO-d6) δ: 7.44 (dd, *J* = 12.3, 2.1 Hz, 1 H), 7.24 (m, 2 H), 4.98 (m, 1 H), 4.47 (m, 2 H), 4.16 (t, *J* = 9.4 Hz, 1 H), 3.80 (m, 1 H), 3.23 (s, 3 H), 2.19 (d, *J* = 1.5 Hz, 3 H).

RE3.iii) (S)-3-(3-Fluoro-4-methyl-phenyl)-5-iodomethyl-oxazolidin-2-one

[0137] A mixture of intermediate *RE3.ii)* (640 mg, 2.11 mmol) and NaI (1.27 g, 8.44 mmol) in acetone (12 mL) was heated at reflux for 3 h. The solvent was evaporated and the residue extracted with water/DCM. The org. layer was washed with brine, dried over $MgSO_4$ and concentrated under reduced pressure to afford the title compound as a yellow solid (600 mg, 85%).
MS (ESI, m/z): 335.9 [M+H$^+$].

RE3.iv) (R)-5-{[1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylamino]-methyl}-3-(3-fluoro-4-methyl-phenyl)-oxazolidin-2-one

[0138] According to procedure I and starting from intermediate *RE2.ii)* and intermediate *RE3.iii),* the title compound was isolated as a colorless solid (45 mg, 35%).
^{1}H NMR ($CDCl_3$) δ: 8.30 (d, *J* = 4.7 Hz, 1 H), 8.01 (d, *J* = 9.1 Hz, 1 H), 7.36 (m, 1 H), 7.14 (m, 2 H), 6.95 (d, *J* = 9.1 Hz, 1 H), 4.94 (m, 2 H), 4.75 (m, 1 H), 4.42 (m, 2 H), 3.96 (m, 6 H), 3.05 (m, 1 H), 2.93 (m, 1 H), 2.24 (d, *J* = 1.8 Hz, 3 H).
MS (ESI, m/z): 456.6 [M+H$^+$].

Reference Example 4: (*R*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-{[1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylamino]-methyl}-oxazolidin-2-one

RE4.i) Methanesulfonic acid (S)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-2-oxo-oxazolidin-5-ylmethyl ester

[0139] The title compound was prepared from the (S) enantiomer of intermediate RE1.iii) as described in Reference Example 1) step RE1.iv) and isolated as a colourless material (1.11 g, 50%).
MS (ESI, m/z): 330.1 [M+H$^+$].

RE4.ii) (S)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-iodomethyl-oxazolidin-2-one

[0140] The title compound was obtained as a colorless solid (393 mg, 70%) starting from intermediate *RE4.i)* and NaI following the procedure described in Reference Example 3 step *RE3.iii).*
^{1}H NMR ($CDCl_3$) δ: 7.07 (d, *J* = 2.6 Hz, 1 H), 6.98 (dd, *J* = 9.1, 2.6 Hz, 1 H), 6.85 (d, *J* = 8.9 Hz, 1 H), 4.68 (m, 1 H), 4.24 (s, 4 H), 4.10 (t, *J* = 9.1 Hz, 1 H), 3.72 (dd, *J* = 9.1, 5.9 Hz, 1 H), 3.46 (m, 1 H), 3.33 (m, 1 H).
MS (ESI, m/z): 362.1 [M+H$^+$].

RE4.iii) (R)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-{[1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylamino]-methyl}-oxazolidin-2-one

[0141] The title compound was isolated as a colorless solid (50 mg, 45%) starting from intermediates *RE2.ii)* and *RE4.ii)* following the procedure I.
MS (ESI, m/z): 482.2 [M+H$^+$].

Reference Example 5: 6-((*R*)-*5*-{[1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one

RE5.i) 6-[(S)-3-(tert-Butyl-dimethyl-silanyloxy)-2-hydroxy-propylamino]-4H-benzo[1,4]thiazin-3-one

[0142] In analogy to the preparation of intermediate *RE2.v)* and starting from 6-amino-4*H*-benzo[1,4]thiazin-3-one (commercial), the title compound was obtained as a pale brown foam (11.16 g, 44%).
MS (ESI, m/z): 369.3 [M+H$^+$].

RES.ii 6-[(S)-5-(tert-Butyl-dimethyl-silanyloxymethyl)-2-oxo-oxazolidin-3-yl]-4H-benzo[1,4]thiazin-3-one

[0143] In analogy to the preparation of intermediate *RE2.iv),* the title compound was obtained from intermediate *RE5.i)* as an off-white solid (7.49 g, 63%).
MS (ESI, m/z): 395.1 [M+H$^+$].

RE5.iii) 6-((S)-5-Hydroxymethyl-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

[0144] In analogy to the preparation of intermediate *RE2.iii),* the title compound was obtained from intermediate *RE5.ii)* as a colorless solid (7.72 g, 95%).
MS (ESI, m/z): 281.3 [M+H$^+$].

RE5.iv) Toluene-4-sulfonic acid (S)-2-oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl)-oxazolidin-5-ylmethyl ester

[0145] To a solution of intermediate *RE5.iii)* (3.2 g, 11.5 mmol) and DMAP (1.40 g, 11.5 mmol) in DCM (80 mL) cooled to 0 °C were added TEA (4.6 mL, 33.3 mmol) and a solution of p-Ts-Cl (2.2 g, 11.5 mmol) in DCM (15 mL). The mixture was stirred at rt over night after which water was added. The resulting solid was filtered to afford the title compound as beige solid (4.19 g, 84%).
MS (ESI, m/z): 435.2 [M+H$^+$].

RE5.v) 6-((S)-5-Iodomethyl-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

[0146] A suspension of intermediate *RE5.iv)* (4.19 g, 9.64 mmol) and NaI (5.78 g, 38.57 mmol) in acetone (70 mL) was refluxed for 5h. The solvent was evaporated and the residue extracted with water/DCM. Thereby the desired product precipitated as a pale pink solid (3.39g, 90%).
^{1}H NMR (DMSO-d6) δ: 10.54 (s, 1 H), 7.30 (m, 2 H), 7.11 (dd, *J* = 8.5, 2.1 Hz, 1 H), 4.69 (m, 1 H), 4.13 (t, *J* = 9.1 Hz, 1 H), 3.57 (m, 3 H), 3.43 (s, 2 H).
MS (ESI, m/z): 391.1 [M+H$^+$].

RE5.vi) 6-((R)-5-{[1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-azetidin-3-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

[0147] According to procedure I and starting from intermediate *RE2.ii)* and intermediate *RE5.v)* the title compound was isolated as a yellow solid (40 mg, 24%).

^{1}H NMR ($CDCl_3$) δ: 8.47 (s, 1 H), 8.29 (d, *J* = 4.7 Hz, 1 H), 8.00 (d, *J* = 9.1 Hz, 1 H), 7.49 (d, *J* = 2.3 Hz, 1 H), 7.24 (m, 1 H), 6.95 (d, *J* = 8.5 Hz, 1 H), 6.87 (dd, *J* = 8.5, 2.3 Hz, 1 H), 4.92 (m, 2 H), 4.76 (m, 1 H), 4.42 (m, 2 H), 4.03 (t, *J* = 8.8 Hz, 1 H), 3.89 (m, 5 H), 3.36 (s, 2 H), 3.06 (dd, *J* = 12.9, 4.1 Hz, 1 H), 2.90 (dd, *J* = 12.9, 5.6 Hz, 1 H).
MS (ESI, m/z): 511.2 [M+H$^+$].

Reference Example 6: 6-((*R*)-5-{[(S)-1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-one

RE6.i) [(S)-1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-yl]-carbamic acid tert-butyl ester

[0148] According to procedure F and starting from 8-bromo-7-fluoro-2-methoxy-[1,5]naphthyridine and (*S*)-(-)-3-(*tert*-butoxycarbonylamino)pyrrolidine the title intermediate was isolated as a yellow oil (304 mg, 48%).
MS (ESI, m/z): 363.1 [M+H$^+$].

RE6.ii) (S)-1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-ylamine

[0149] According to procedure E and starting from intermediate *RE6.i)* the title intermediate was isolated as a pale yellow solid (176 mg, 81 %).
MS (ESI, m/z): 263.3 [M+H$^+$].

RE6.iii) 6-((R)-5-{[(S)-1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]oxazin-3-one

[0150] According to procedure H and starting from intermediate *RE6.ii)* and intermediate *RE2.vi),* the title compound was isolated as a pale yellow solid (12 mg, 32%).
MS (ESI, m/z): 509.1 [M+H$^+$].

Example 40: 6-{(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]oxazin-3-one

[0151] According to procedure H and starting from intermediate *5.i)* and intermediate *RE2.vi* the title compound was isolated as a pale yellow foam (79 mg, 55%).
MS (ESI, m/z): 491.1 [M+H$^+$].

Example 41: 6-{(*R*)-5-[4-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]oxazin-3-one

41.i) 7-Fluoro-2-methoxy-8-piperazin-1-yl-[1,5]naphthyridine

[0152] A mixture of 8-bromo-7-fluoro-2-methoxy-[1,5]naphthyridine (2.45g, 9.5mmol) and piperazine (4.1g, 47.6mmol, 5eq) in 1-pentanol (10ml) was heated at 80°C overnight. The mixture was cooled to rt and the precipitate filtered off (piperazine hydrobromide). The filtrate was concentrated in vacuo (bath temperature 70°C). The residue was purified by chromatography on SiO_2 (EA/MeOH 4:1 to 1:1) to afford the title intermediate as a slightly yellow solid (1.24 g, 50%)
MS (ESI, m/z): 263.6 [M+H$^+$].

41. ii 6-{(R)-5-[4-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]oxazin-3-one

[0153] According to procedure H the title compound was obtained from intermediates *41.i)* and *RE2.vi)* and isolated as an off-white foam (31 mg, 21%).
^{1}H NMR ($CDCl_3$) δ: 8.47 (d, *J* = 4.4 Hz, 1 H), 8.09 (m, 2 H), 7.46 (d, *J* = 2.3 Hz, 1 H), 6.99 (m, 2 H), 6.82 (dd, *J* = 8.8, 2.6 Hz, 1 H), 4.84 (m, 1 H), 4.59 (s, 2 H), 4.06 (m, 4 H), 3.84 (m, 1 H), 3.74 (m, 4 H), 2.82 (m, 6 H).
MS (ESI, m/z): 509.1 [M+H$^+$].

Example 42: 6-{(*R*)-5-[4-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]thiazin-3-one

[0154] According to procedure I and starting from intermediate *41.i)* and intermediate *RE5.v),* the title compound was

isolated as a pale yellow foam (56 mg, 60%).
^{1}H NMR ($CDCl_3$) δ: 8.48 (d, *J* = 4.4 Hz, 1 H), 8.11 (d, *J* = 9.4 Hz, 1 H), 7.88 (s, 1 H), 7.43 (d, *J* = 2.3 Hz, 1 H), 7.30 (d, *J* = 8.5 Hz, 1 H), 6.99 (m, 2 H), 4.85 (m, 1 H), 4.09 (t, *J* = 8.5 Hz, 1 H), 4.03 (s, 3 H), 3.86 (dd, *J* = 8.8, 7.0 Hz, 1 H), 3.75 (m, 4 H), 3.42 (s, 2 H), 2.83 (m, 6 H).
MS (ESI, m/z): 524.9 [M+H$^+$].

Example 43: (*R*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-(4-quinolin-4-yl-piperazin-1-ylmethyl)-oxazolidin-2-one

43.i) 4-[(R)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-2-oxo-oxazolidin-5-ylmethyl]-piperazine-1-carboxylic acid tert-butyl ester

[0155] A solution of piperazine-1-carboxylic acid *tert*-butyl ester (commercial; 1.40 g, 7.6 mmol) in dry MeOH (25 mL) was treated with $MgSO_4$ (1.9 g). (R)-Epichlorohydrin (1.47 mL, 18.9 mmol) was added dropwise and the mixture was heated at 35°C for 2h and was then stirred at rt overnight. The mixture was filtered over Celite and concentrated under reduced pressure. The residue was taken up in DCM and washed with water. The org. phase was dried over $MgSO_4$ and concentrated under reduced pressure to afford the crude 4-((R)-3-chloro-2-hydroxy-propyl)-piperazine-1-carboxylic acid *tert*-butyl ester. To a solution of the above intermediate chlorohydrin (2.10 g, 7.53 mmol) and (2,3-dihydro-benzo[1,4]dioxin-6-yl)-carbamic acid benzyl ester (2.15 g, 1 eq, prepared according to WO2007107965) in DMF (30 mL) was added LiOtBu (10.3 mL, 2.2M in THF) at rt. The mixture was stirred at rt over night and subsequently at 50 °C for 5h. The mixture was partitioned between EA and 0.5M HCl. The aq. phase was basified (NH_4OH) and extracted with EA. The org. layer was dried over $MgSO_4$ and concentrated under reduced pressure to afford the title compound as a colorless solid (1.15 g, 36%).
MS (ESI, m/z): 420.2 [M+H$^+$].

43.ii) (R)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-piperazin-1-ylmethyl-oxazolidin-2-one

[0156] According to procedure E the title compound was obtained from intermediate *43.i)* and isolated as colorless solid (854 mg, 97%).
MS (ESI, m/z): 320.3 [M+H$^+$].

43.iii) (R)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-(4-quinolin-4-yl-piperazin-1-ylmethyl)-oxazolidin-2-one

[0157] According to procedure F and starting from intermediate *43. ii)* and 4-chloro-quinoline (commercial) the title compound was isolated as a yellow solid (36 mg, 38%).
MS (ESI, m/z): 447.3 [M+H$^+$].

Example 44: (*R*)-3-(2,3-Dihydro-benzo[1,4] dioxin-6-yl)-5-{[(*RS*)-1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-3-ylamino]-methyl}-oxazolidin-2-one

44.i) (3RS)-[1-(6-Methoxy-[l,5]naphthyridin-4-yl)-piperidin-3-yl]-carbamic acid tert-butyl ester

[0158] According to procedure F and starting from 8-bromo-2-methoxy-[1,5]naphthyridine and *(RS)*-piperidin-3-yl-carbamic acid tert-butyl ester (commercial) and using 1-pentanol instead of NMP as reaction solvent, the title compound was isolated as an orange oil (2.44 g, 68%).
^{1}H NMR ($CDCl_3$) δ: 8.43 (d, *J* = 5.3 Hz, 1 H), 8.11 (d, *J* = 9.1 Hz, 1 H), 7.15 (d, *J* = 9.1 Hz, 1 H), 6.95 (d, *J* = 5.3 Hz, 1 H), 6.84 (d, *J* = 7.9 Hz, 1 H), 4.31 (m, 1 H), 4.03 (m, 1 H), 3.96 (s, 3 H), 3.65 (m, 1 H), 3.33 (m, 1 H), 3.13 (m, 1 H), 2.88 (m, 1 H), 1.80 (m, 3 H), 1.34 (m, 9 H).

44.ii) (3RS)-1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-3-ylamine

[0159] According to procedure E, the title intermediate was obtained from intermediate *44.i)* and isolated as brown oil (1.45 g, 88%).
MS (ESI, m/z): 259.4 [M+H$^+$].

44.iii) (R)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-{[(RS)-1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-3-ylamino]-methyl}-oxazolidin-2-one

[0160] According to procedure H, the title compound was obtained from intermediate *44.ii)* and *RE4.i)* and isolated

as yellow solid (45 mg, 43%).
MS (ESI, m/z): 492.2 [M+H$^+$].

Example 45: (*RS*)-3-(6,7-Dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one

[0161] A mixture of intermediate *38.iii)* (0.1 g, 0.29 mmol), Cs_2CO_3 (0.116 g), tris(dibenzylidenacetone)dipalladium(0) chloroform complex (15 mg) and BINAP (27 mg) in dioxane (4.5 mL) was sonicated for 10 min. The mixture turned from red to orange. 3-Chloro-6,7-dihydro-[1,4]dioxino[2,3-c]pyridazine (0.1 g, 0.58 mmol, WO07/071936) was added and the mixture heated at 100°C over night. The mixture was cooled and partitioned between water and EA. The org. extracts were washed with sat. NH_4Cl solution, dried over $MgSO_4$ and concentrated under reduced pressure. The residue was purified by CC (EA/MeOH 9:1+1% NH_4OH) and triturated with ether and filtered to give the title compound (0.09 g, 64% yield) as a colourless solid.
^{1}H NMR (DMSO-d6) δ: 8.44 (d, *J* = 5.3 Hz, 1 H), 8.11 (d, *J* = 9.1 Hz, 1 H), 7.74 (s, 1 H), 7.14 (d, *J* = 9.1 Hz, 1 H), 6.91 (d, *J* = 5.3 Hz, 1 H), 4.93 (m, 1 H), 4.47 (m, 2 H), 4.39 (m, 2 H), 4.28 (m, 1 H), 3.91 (m, 4 H), 3.60 (m, 4 H), 2.76 (m, 6 H),
MS (ESI, m/z): 480.4 [M+H$^+$].

Example 46: (*RS*)-7-{5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-1H-quinolin-2-one

[0162] A mixture of intermediate *38.iii)* (0.15g, 0.45 mmol), palladium (II) acetate (0.01g), K_3PO_4 (0.19g), DPEphos (49mg) and 7-bromo-1H-quinolin-2-one (0.1g, 0.45 mmol) in dioxane (2 ml) was degassed and heated at 100°C overnight. The mixture was partitioned between EA (20 ml) and water (20 ml). The org. phase was washed with brine, dried over $MgSO_4$ and concentrated. The product (0.02g, 9% yield) was isolated after CC (EA/MeOH 19:1, 9:1, 4:1 +1% NH_4OH) as an off-white solid.
^{1}H NMR (DMSO-d6) δ: 11.63 (s, 1 H), 8.45 (d, *J* = 5.3 Hz, 1 H), 8.13 (d, *J* = 9.1 Hz, 1 H), 7.82 (d, *J* = 9.7 Hz, 1 H), 7.64 (d, *J* = 8.8 Hz, 1 H), 7.58 (d, *J* = 2.1 Hz, 1 H), 7.39 (dd, *J* = 8.8, 2.1 Hz, 1 H), 7.17 (d, *J* = 9.1 Hz, 1 H), 6.94 (d, *J* = 5.3 Hz, 1 H), 6.37 (d, *J* = 9.7 Hz, 1 H), 4.93 (m, 1 H), 4.19 (t, *J* = 8.8 Hz, 1 H), 3.94 (m, 4 H), 3.83 (dd, *J* = 8.8, 7.3 Hz, 1 H), 3.65 (s, 4 H), 2.79 (m, 6 H).
MS (ESI, m/z): 487.6 [M+H$^+$].

Example 47: (*RS*)-6-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-pyrido[3,2-*b*][1,4]oxazin-3-one

[0163] A mixture of intermediate *38.iii)* (0.15g, 0.45 mmol), palladium (II) acetate (0.01g), K_3PO_4 (0.19g), DPEphos (49mg) and 6-bromo-4H-pyrido[3,2-b][1,4]oxazin-3-one (0.123g, 0.54 mmol) in dioxane (2 ml) was degassed and heated at 100°C overnight. The mixture was partitioned between EA (20 ml) and water (20 ml). The org. phase was washed with brine, dried over $MgSO_4$ and concentrated under reduced pressure. The product (0.054g, 25% yield) was isolated after CC (EA/MeOH 19:1, 9:1, 4:1 +1% NH_4OH) and crystallization from ether as an off-white solid.
^{1}H NMR (DMSO-d6) δ: 11.16 (br, 1 H), 8.44 (d, *J* = 5.0 Hz, 1 H), 8.12 (d, *J* = 8.8 Hz, 1 H), 7.58 (m, 1 H), 7.40 (d, *J* = 8.5 Hz, 1 H), 7.15 (d, *J* = 9.1 Hz, 1 H), 6.92 (d, *J* = 5.3 Hz, 1 H), 4.87 (m, 1 H), 4.58 (s, 2 H), 4.19 (d, *J* = 1.2 Hz, 1 H), 3.94 (s, 3 H), 3.83 (m, 1 H), 3.59 (m, 4 H), 2.75 (m, 6 H)
MS (ESI, m/z): 492.1 [M+H$^+$].

Example 48: 6-((*R*)-5-{2-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-yl]-2-oxoethyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

48.i) (3R)-3-Hydroxy-4-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-ylamino)-butyric acid tert-butyl ester

[0164] The title intermediate was prepared according to Procedure A starting from (R)-oxiranyl-acetic acid *tert*-butyl ester (0.5g, 3.2 mmol, prepared according to JACS, 2000, 122, 11090) and 6-amino-4*H*-benzo[1,4]thiazin-3-one (0.577g, 3.2 mmol) and isolated as a beige solid (0.98g, 90% yield).
MS (ESI, m/z): 339.4 [M+H$^+$].

48. ii) (R)-[2-Oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl)-oxazolidin-5-yl]-acetic acid tert-butyl ester

[0165] The title intermediate was prepared according to Procedure B starting from intermediate *48.i)* (0.98g, 2.9 mmol) and isolated after chromatography on SiO_2 (hept/EA 1:1, 1:2, EA) and trituration with ether as an off-white solid (0.35g,

33%).
^{1}H NMR (DMSO-d6) δ: 10.54 (s, 1 H), 7.29 (m, 2 H), 7.11 (dd, *J* = 8.5, 2.3 Hz, 1 H), 4.91 (m, 1 H), 4.11 (t, *J* = 8.8 Hz, 1 H), 3.73 (m, 1 H), 3.42 (s, 2 H), 2.80 (m, 2 H), 1.39 (s, 9 H).
MS (ESI, m/z): 365.2 [M+H$^+$].

48.iii) [(R)-2-Oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl)-oxazolidin-5-yl]-acetic acid

[0166] A solution of intermediate *48.ii)* (0.26g, 0.7 mmol) in DCM (2.5 mL) was treated with triethylsilane (0.127 mL) and TFA (2.5 mL). The mixture was stirred at rt for 4h and water was added. The resulting precipitate was filtered and washed with water and dried at HV to give the title intermediate (0.15g, 70% yield) as a colourless solid.
^{1}H NMR (DMSO-d6) δ: 12.54 (s, 1 H), 10.52 (s, 1 H), 7.28 (m, 2 H), 7.10 (dd, *J* = 8.8, 2.3 Hz, 1 H), 4.92 (m, 1 H), 4.11 (t, *J* = 8.8 Hz, 1 H), 3.73 (m, 1 H), 3.41 (s, 2 H), 2.81 (m, 2 H).

48.iv) 6-((R)-5-{2-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-yl]-2-oxo-ethyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

[0167] A solution of intermediate *48.iii)* (0.055g, 0.178 mmol) and intermediate *5.i)* (0.043g, 0.178 mmol) in DMF (1.5 mL) was treated with DIPEA (0.088 mL, 3 eq) and dropwise with a solution of propylphosphonic anhydride solution (50% in EA, 0.116 ml). The mixture was stirred at rt for 5h, partitioned between EA (15 mL) and water (15 mL). The org. phase was washed with water and brine, dried over $MgSO_4$ and concentrated. The residue was triturated with EA/MeOH, filtered and dried under HV to give 0.044g (46% yield) of a yellowish solid.
^{1}H NMR (DMSO-d6) δ: 10.51 (br, 1 H), 8.46 (m, 1 H), 8.13 (d, *J* = 8.5 Hz, 1 H), 7.28 (m, 2 H), 7.17 (m, 2 H), 6.94 (d, *J* = 5.0 Hz, 1 H), 4.17 (d, *J* = 0.6 Hz, 1 H), 3.98 (m, 4 H), 3.66 (m, 10 H), 3.40 (s, 2 H).
MS (ESI, m/z): 535.5 [M+H$^+$].

Example 49: 6-((*R*)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

49.i) [1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-yl]-carbamic acid benzyl ester

[0168] According to procedure F and starting from 8-bromo-2-methoxy-[1,5]naphthyridine and piperidin-4-yl-carbamic acid benzyl ester the title compound was isolated as a pale yellow foam (806 mg, 60%).
MS (ESI, m/z): 393.4 [M+H$^+$].

49.ii) 1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamine

[0169] According to procedure G and starting from intermediate *49.i)* the title compound was isolated as a yellow oil (559 mg, 100%).
MS (ESI, m/z): 259.4 [M+H$^+$].

49.iii) 6-((R)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

[0170] According to procedure I and starting from intermediate *49.ii)* and intermediate *RE5.v)* the title compound was isolated as a yellow foam (34 mg, 25%).
MS (ESI, m/z): 521.3 [M+H$^+$].

Example 50: 6-((*R*)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]oxazin-3-one

[0171] According to procedure H and starting from intermediate *49.ii)* and intermediate *RE2.vi)* the title compound was isolated as a yellow foam (22 mg, 15%).
^{1}H NMR ($CDCl_3$) δ: 8.51 (d, *J* = 5.3 Hz, 1 H), 8.34 (s, 1 H), 8.14 (d, *J* = 9.1 Hz, 1 H), 7.48 (d, *J* = 2.6 Hz, 1 H), 7.06 (d, *J* = 9.1 Hz, 1 H), 6.95 (m, 1 H), 6.81 (m, 2 H), 4.78 (m, 1 H), 4.58 (s, 2 H), 4.27 (m, 2 H), 4.02 (m, 4 H), 3.88 (m, 1 H), 3.04 (m, 4 H), 2.81 (m, 1 H), 2.08 (m, 2 H), 1.65 (m, 3 H).
MS (ESI, m/z): 505.4 [M+H$^+$].

Example 51: (*R*)-3-(3-Fluoro-4-methyl-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-one

[0172] According to procedure I and starting from intermediate *49.ii)* and intermediate *RE3.iii)* the title compound was isolated as a yellow foam (24 mg, 17%).
^{1}H NMR ($CDCl_3$) δ: 8.51 (d, *J* = 5.0 Hz, 1 H), 8.14 (d, *J* = 9.1 Hz, 1 H), 7.37 (dd, *J* = 11.4, 1.2 Hz, 1 H), 7.15 (m, 2 H), 7.06 (d, *J* = 9.1 Hz, 1 H), 6.83 (d, *J* = 5.0 Hz, 1 H), 4.78 (m, 1 H), 4.28 (m, 2 H), 4.04 (m, 4 H), 3.88 (dd, *J* = 8.5, 6.7 Hz, 1 H), 3.04 (m, 4 H), 2.81 (m, 1 H), 2.24 (d, *J* = 1.8 Hz, 3 H), 2.08 (m, 2 H), 1.67 (m, 3 H).
MS (ESI, m/z): 466.2 [M+H$^+$].

Example 52: 6-((*R*)-5-{1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

52.i) [1(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-yl]-carbamic acid benzyl ester

[0173] An oven-dried vial was charged with 8-bromo-7-fluoro-2-methoxy-[1,5]naphthyridine (797 mg, 3.40 mmol), palladium(II)acetate (31 mg, 0.136 mmol), DPEphos (146 mg, 0.272 mmol), K_3PO_4 (1.81 g, 8.50 mmol) and piperidin-4-yl-carbamic acid benzyl ester (875 mg, 3.40 mmol). The resulting mixture was purged with argon for several min. Dioxane (11 mL) was then added via syringe and the resulting suspension was purged with argon for 3 min. The mixture was then heated at 85 °C overnight. The solvent was removed *in vacuo* and the residue was extracted with EA/water. The org. layer was washed with brine, dried over $MgSO_4$ and concentrated. To the resulting solid TBME and a few drops of DCM and MeOH were added and the mixture was sonicated for 5 min and filtered to afford the title intermediate as a pale yellow foam (293 mg, 21 %).
MS (ESI, m/z): 411.1 [M+H$^+$].

52.ii) 1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamine

[0174] According to procedure G and starting from intermediate *52.i)* the title compound was isolated as a yellow oil (191 mg, 97%).
MS (ESI, m/z): 277.1 [M+H$^+$].

52.iii) 6-((R)-5-{[1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

[0175] According to procedure I and starting from intermediate *52.ii)* and intermediate *RE5.v)* the title compound was isolated as a yellow foam (34 mg, 25%).
MS (ESI, m/z): 539.0 [M+H$^+$].

Example 53: 6-((*R*)-5-{[1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]oxazin-3-one

[0176] According to procedure H and starting from intermediate *52.ii)* and intermediate *RE2.vi)* the title compound was isolated as a yellow foam (16 mg, 9%).
^{1}H NMR ($CDCl_3$) δ: 8.47 (d, *J* = 4.4 Hz, 1 H), 8.10 (m, 2 H), 7.47 (d, *J* = 2.6 Hz, 1 H), 6.98 (m, 2 H), 6.81 (dd, *J* = 8.8, 2.6 Hz, 1 H), 4.79 (m, 1 H), 4.59 (s, 2 H), 4.05 (m, 5 H), 3.89 (m, 1 H), 3.34 (m, 2 H), 3.11 (m, 1 H), 2.99 (m, 1 H), 2.77 (m, 1 H), 2.03 (m, 2 H), 1.60 (m, 3 H).
MS (ESI, m/z): 523.1 [M+H$^+$].

Example 54: 6-[(*R*)-5-({[1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-yl]-methyl-amino}-methyl)-2-oxo-oxazolidin-3-yl]-4H-benzo[1,4]thiazin-3-one

[0177] According to procedure M and starting from compound *52.iii),* the title compound was isolated as a pale yellow foam (15 mg, 97%).
MS (ESI, m/z): 553.2 [M+H$^+$].

Example 55: 6-((S)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

[0178] According to procedure I and starting from intermediate *49.ii)* and the enantiomeric antipode of intermediate *RE5.v)* the title compound was isolated as a pale yellow solid (43 mg, 31%).
MS (ESI, m/z): 521.3 [M+H$^+$].

Reference Example 7: (R)-5-{[(S)-1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-ylamino]-methyl}-3-(4-methoxy-phenyl)-oxazolidin-2-one

RE7.i) (S)-5-Hydroxymethyl-3-(4-methoxy-phenyl)-oxazolidin-2-one

[0179] Starting from (4-methoxy-phenyl)-carbamic acid benzyl ester (prepared from 4-methoxy-aniline and CbzCl according to procedure C) and (S)-glycidyl butyrate and following the procedure described for the preparation of intermediate *RE1.iii),* the title compound was obtained as a grey solid (469 mg, 54%).
MS (ESI, m/z): 224.2 [M+H$^+$].

RE7.ii) Methanesulfonic acid (S)-3-(4-methoxy-phenyl)-2-oxo-oxazolidin-5-ylmethyl ester

[0180] A solution of intermediate *RE7.i)* (460 mg, 2.06 mmol) in anhydrous DCM (8 mL) and DIPEA (0.42 mL, 2.47 mmol) was cooled to 0°C and Ms-Cl (0.18 mL, 2.27 mmol) was added dropwise. The resulting mixture was stirred at 0°C for 1h. Water was added and the mixture was extracted with DCM and the combined org. layers were washed with water.

[0181] The yellow residue was triturated with EA/ether to afford the title intermediate as a grey solid (426 mg, 69%).
MS (ESI, m/z): 301.8 [M+H$^+$].

RE7.iii) (R)-5-{[(S)-1-(3-Fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-ylamino]-methyl}-3-(4-methoxy-phenyl)-oxazolidin-2-one

[0182] According to procedure H and starting from *RE7.ii)* and intermediate *RE6.ii)* the title compound was isolated as a pale yellow solid (56 mg, 42%).
MS (ESI, m/z): 468.1 [M+H$^+$].

Reference Example 8: (R)-3-(4-Ethoxy-phenyl)-5-{[(S)-1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-ylamino]-methyl}-oxazolidin-2-one

RE8.i) Methanesulfonic acid (S)-3-(4-ethoxy-phenyl)-2-oxo-oxazolidin-5-ylmethyl ester

[0183] According to the preparation of intermediate *49.ii)* and starting the synthetic sequence with (4-ethoxy-phenyl)-carbamic acid benzyl ester (prepared from 4-ethoxy-aniline and CbzCl according to procedure C) the title intermediate was obtained as a grey solid (489 mg, 78%).
MS (ESI, m/z): 316.0 [M+H$^+$].

RE8.ii) (R)-3-(4-Ethoxy-phenyl)-5-{[(S)-1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-ylamino]-methyl}-oxazolidin-2-one

[0184] According to procedure H and starting from *RE8.i)* and intermediate *RE6.ii)* the title compound was isolated as a pale yellow solid (62 mg, 45%).
MS (ESI, m/z): 482.3 [M+H$^+$].

Reference Example 9: (R)-3-(4-Difluoromethoxy-phenyl)-5-{[(S)-1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-ylamino]-methyl}-oxazolidin-2-one

RE9.i) Methanesulfonic acid (S)-3-(4-difluoromethoxy-phenyl)-2-oxo-oxazolidin-5-ylmethyl ester

[0185] According to the preparation of intermediate *49.ii)* and starting the synthetic sequence with (4-difluoromethoxy-phenyl)-carbamic acid benzyl ester (prepared from 4-difluoromethoxy-aniline and CbzCl according to procedure C) the title intermediate was obtained as a yellow solid (293 mg, 68%).

MS (ESI, m/z): 338.3 [M+H$^+$].

RE9.ii) (R)-3-(4-Difluoromethoxy-phenyl)-5-{[(S)-1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-pyrrolidin-3-ylamino]-methyl}-oxazolidin-2-one

[0186] According to procedure H and starting from *RE9.i)* and intermediate *RE6.ii)* the title compound was isolated as a pale yellow solid (23 mg, 16%).
MS (ESI, m/z): 504.4 [M+H$^+$].

Example 56: 6-((R)-5-{[1-(6-Fluoro-quinolin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo [1,4] thiazin-3-one

56.i) 1-(6-Fluoro-quinolin-46yl)6piperidin-4-ylamine

[0187] Starting from 4-bromo-6-fluoroquinoline (commercial) and piperidin-4-yl-carbamic acid tert-butyl ester (commercial) the title compound was prepared according to procedure F followed by procedure E and was isolated as a yellow solid (223 mg, 40% over two steps).
MS (ESI, m/z): 246.5 [M+H$^+$].

56.ii) 6-((R)-5-{[1-(6-Fluoro-quinolin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4H-benzo[1,4]thiazin-3-one

[0188] According to procedure I and starting from intermediate *56.i)* and intermediate *RE5.v)* the title compound was isolated as a yellow solid (15 mg, 9%).
MS (ESI, m/z): 508.1 [M+H$^+$].

Example 57: 4-(4-{[(R)-2-Oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl)-oxazolidin-5-ylmethyl]-amino}-piperidin-1-yl)-quinoline-6-carbonitrile

57.i) 4-(4-Amino-piperidin-1-yl)-quinoline-6-carbonitrile

[0189] Starting from 4-bromo-6-cyanoquinoline (commercial) and piperidin-4-yl-carbamic acid tert-butyl ester (commercial) the title compound was prepared according to procedure F followed by procedure E and was isolated as a yellow solid (382 mg, 69% over two steps).
MS (ESI, m/z): 253.0 [M+H$^+$].

57.ii) 4-(4-{[(R)-2-Oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl)-oxazolidin-5-ylmethyl]-amino}-piperidin-1-yl)-quinoline-6-carbonitrile

[0190] According to procedure I and starting from intermediate *57.i)* and intermediate *RES.v)* the title compound was isolated as a yellow solid (16 mg, 9%).
MS (ESI, m/z): 515.4 [M+H$^+$].

Example 58: (R)-5-{[1-(6-Methoxy-[1,5] naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-3-(4-methoxy-phenyl)-oxazolidin-2-one

[0191] According to procedure H and starting from *RE7.ii)* and intermediate *49.ii)* the title compound was isolated as a pale yellow solid (40 mg, 30%).
MS (ESI, m/z): 464.3 [M+H$^+$].

Example 59: (R)-3-(4-Ethoxy-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-one

[0192] According to procedure H and starting from *RE8.i)* and intermediate *49.ii)* the title compound was isolated as a colorless solid (50 mg, 36%).
MS (ESI, m/z): 477.9 [M+H$^+$].

Example 60: (R)-3-(4-Difluoromethoxy-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-one

[0193] According to procedure H and starting from *RE9.i)* and intermediate *49.ii)* the title compound was isolated as a colorless solid (26 mg, 19%).
MS (ESI, m/z): 500.2 [M+H$^+$].

Pharmacological properties of the invention compounds

In vitro assays

Experimental methods:

[0194] These assays have been performed following the description given in "Methods for dilution Antimicrobial Susceptibility Tests for Bacteria that Grow Aerobically, 4th ed.; Approved standard: NCCLS Document M7-A4; National Committee for Clinical Laboratory Standards: Villanova, PA, USA, 1997". Minimal inhibitory concentrations (MICs; mg/l) were determined in cation-adjusted Mueller-Hinton Broth by a microdilution method following NCCLS guidelines (National Committee for Clinical Laboratory Standards. Methods for Dilution Antimicrobial Susceptibility). The pH of the test medium was 7.2-7.3.

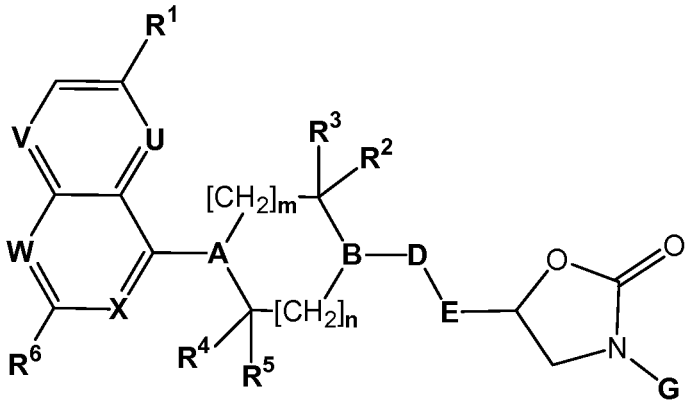
Results:

[0195] All Example compounds were tested against several Gram positive and Gram negative bacteria.
[0196] Antibacterial test results are given in the table hereafter (MIC in mg/l).

Compound of Example	S aureus A798	Compound of Example	S aureus A798	Compound of Example	S aureus A798
1	<= 0.031	**2**	<= 0.031	**3**	<= 0.031
4	<= 0.031	**5**	<= 0.031	**6**	<= 0.031
7	0.25	**8**	0.063	**9**	<= 0.031
10	<= 0.031	**11**	2	**12**	0.25
13	0.25	**14**	<= 0.031	**15**	<= 0.031
16	<= 0.031	**17**	<= 0.031	**18**	0.25
19	<= 0.031	**20**	2	**21**	0.25
22	<= 0.031	**23**	<= 0.031	**24**	<= 0.031
25	1	**26**	<= 0.031	**27**	0.125
28	<= 0.031	**29**	<= 0.031	**30**	4
31	0.125	**32**	<= 0.031	**33**	<= 0.031
34	0.063	**35**	0.063	**36**	<= 0.031
37	0.125	**38**	1	**39**	0.5
40	<= 0.031	**41**	<= 0.031	**42**	<= 0.031
43	<= 0.031	**44**	4	**45**	8
46	0.125	**47**	<= 0.031	**48**	<= 0.031
49	<= 0.031	**50**	<= 0.031	**51**	<= 0.031
52	<= 0.031	**53**	<= 0.031	**54**	<= 0.031
55	<= 0.031	**56**	<= 0.031	**57**	<= 0.031
58	0.25	**59**	0.5	**60**	0.5

Claims

1. A compound of formula (IN)



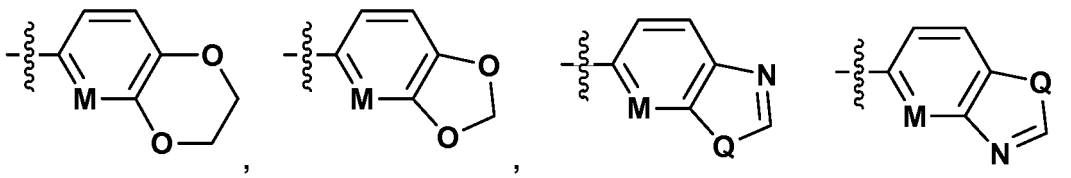
(I_N)

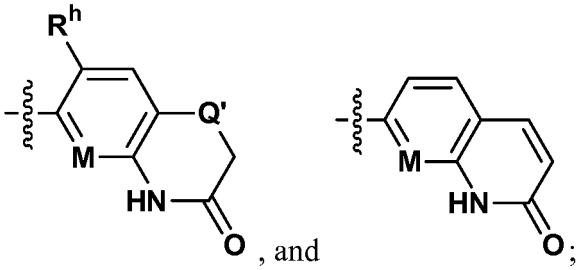
wherein

R^1 represents hydrogen, alkoxy, halogen or cyano;
one or two of **U, V, W,** and **X** represent(s) N and the remaining each represent CH, or, in the case of X, represent CR^a;
R^a represents hydrogen or halogen;
R^6 represents hydrogen or $(C_1$-$C_4)$alkyl;
A represents N;

- **B** represents N; **D** represents a bond; **E** represents CH_2 or *-$COCH_2$- wherein the asterisk indicates the bond which is attached to B; **R^2, R^3, R^4** and **R^5** each represent H; and **m** and **n** each represent the integer 1; or
- **B** represents C(OH), **D** represents a bond, **E** represents CH_2, **R^2, R^3, R^4** and **R^5** each represent H, and **m** and **n** each represent the integer 1; or
- **B** represents CH, **D** represents NR^b, **E** represents CH_2, **R^2, R^3, R^4** and **R^5** each represent H, **R^b** represents H or $(C_1$-$C_4)$alkyl, and **m** and **n** each represent the integer 1; or
- **B** represents CH, **D** represents NH, **E** represents CH_2, **R^2, R^3, R^4** and **R^5** each represent H, **m** represents the integer 2, and **n** represents the integer 0;

G represents phenyl which is unsubstituted, mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of $(C_1$-$C_4)$alkyl, $(C_1$-$C_4)$alkoxy, fluoroalkyl, fluoroalkoxy, cyano, halogen and -$NR^{N1}R^{N2}$; or
G represents pyridin-2-yl which is mono-substituted in position 5, wherein the substituent is selected from the group consisting of $(C_1$-$C_4)$alkyl and fluoroalkyl; or
G represents 6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl; or
G represents a group selected from the group consisting of:



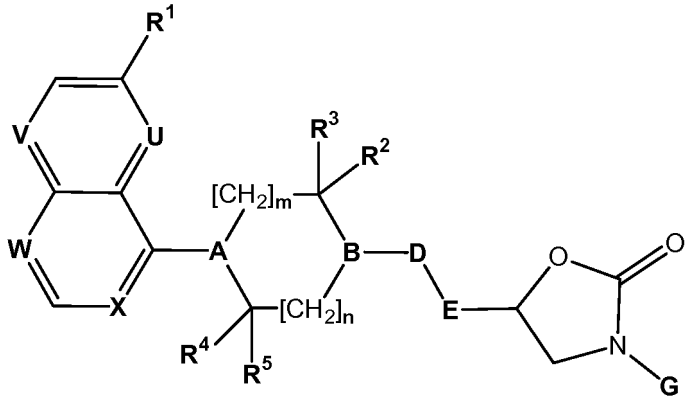


wherein

R^h represents hydrogen or fluorine;
M represents CH or N; and **Q** and **Q'** independently represent O or S; and
R^{N1} and **R^{N2}** independently represent (C_1-C_4)alkyl, or together with the nitrogen that carries them form a pyrrolidine ring;

or a salt of such a compound.

2. A compound of formula (IN) according to claim 1, which is also a compound of formula ($I_{N\text{-}P1}$)



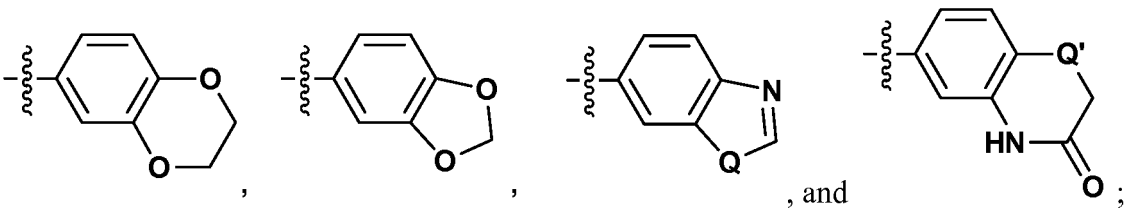
($I_{N\text{-}P1}$)

wherein

R^1 represents alkoxy, halogen or cyano;
one or two of **U, V, W,** and **X** represent(s) N and the remaining each represent CH, or, in the case of X, represent CR^a;
R^a represents hydrogen or halogen;
A represents N;

- **B** represents N, **D** represents a bond, **E** represents CH_2, **R^2, R^3, R^4** and **R^5** each represent H, and **m** and n each represent the integer 1; or
- **B** represents C(OH), **D** represents a bond, **E** represents CH_2, **R^2, R^3, R^4** and **R^5** each represent H, and **m** and n each represent the integer 1; or

G represents phenyl which is unsubstituted, mono-substituted in position 3 or 4, or disubstituted in positions 3 and 4, wherein each substituent is independently selected from the group consisting of (C_1-C_4)alkyl, (C_1-C_4)alkoxy, fluoroalkyl, fluoroalkoxy, cyano, halogen and $-NR^{N1}R^{N2}$; or
G represents pyridin-2-yl which is mono-substituted in position 5, wherein the substituent is selected from the group consisting of (C_1-C_4)alkyl and fluoroalkyl; or
G represents a group selected from the group consisting of:



, , , and ;

wherein

Q and **Q'** independently represent O or S; and
R^{N1} and R^{N2} independently represent (C_1-C_4)alkyl, or together with the nitrogen that carries them form a pyrrolidine ring;

or a salt of such a compound.

3. A compound of formula (IN) according to claim 1, which is selected from:

3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-1-ylmethyl]-oxazolidin-2-one;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-l-(6-methoxy-quinazolin-4-yl)-piperidin-4-ylmethyl]-oxazolidin-2-one;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylmethyl]-oxazolidin-2-one;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-quinazolin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
6-{5-[4-(6-methoxy-quinazolin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-trifluoromethoxy-phenyl)-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-trifluoromethoxy-phenyl)-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-phenyl-oxazolidin-2-one;
(*R*)-3-(4-bromo-3-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3,4-dimethoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(4-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-trifluoromethyl-phenyl)-oxazolidin-2-one;
(*R*)-3-(3-chloro-4-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-methyl-3-trifluoromethyl-phenyl)-oxazolidin-2-one;
(*R*)-3-benzothiazol-6-yl-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(4-difluoromethoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
3-{(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-benzonitrile;
6-{(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-pyrrolidin-1-yl-phenyl)-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-methoxy-phenyl)-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-propyl-phenyl)-oxazolidin-2-one;
(*R*)-3-(4-ethyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3,4-dimethyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3-chloro-4-methoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-

one;
(*R*)-3-(3,4-difluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(4-fluoro-3-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(4-bromo-3-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3-bromo-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-methoxy-3-trifluoromethyl-phenyl)-oxazolidin-2-one;
(*R*)-3-(3-dimethylamino-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-benzo[1,3]dioxol-5-yl-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*R*)-3-(3-fluoro-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*S*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
(*S*)-3-(3-fluoro-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
6- {(*S*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
(*S*)-3-(3-fluoro-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(5-methyl-pyridin-2-yl)-oxazolidin-2-one;
5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(5-trifluoromethyl-pyridin-2-yl)-oxazolidin-2-one;
6-{(*R*)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-one;
6- (*R*)-5-[4-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-one;
6-{(*R*)-5-[4-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
(*R*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-(4-quinolin-4-yl-piperazin-1-ylmethyl)-oxazolidin-2-one;
(*R*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-3-ylamino]-methyl}-oxazolidin-2-one;
3-(6,7-dihydro-[1,4]dioxino[2,3-*c*]pyridazin-3-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
3-(6,7-dihydro-[1,4]dioxino[2,3-*c*]pyridazin-3-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-one;
6-{5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-pyrido[3,2-*b*][1,4]oxazin-3-one;
6-((*R*)-5-{2-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-yl]-2-oxo-ethyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
6-((*R*)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
6-((*R*)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-one;
(*R*)-3-(3-Fluoro-4-methyl-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-one;
6-((*R*)-5-{[1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
6-((*R*)-5-{[1-(3-fluoro-6-methoxy-[1,5]naphthyridni-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-one;
6-[(*R*)-5-({[1-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-yl]-methyl-amino}-methyl)-2-oxo-oxazolidin-3-yl]-4*H*-benzo[1,4]thiazin-3-one;
6- (*R*)-5-[4-hydroxy-4-(6-methoxy-quinolin-4-yl)-piperidin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one; 6-{(*R*)-5-[4-(3-fluoro-6-methoxy-[1,5]naphthyridin-4-yl)-4-hydroxy-piperidin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one;
6- (*R*)-5-[4-hydroxy-4-(6-methoxy-quinolin-4-yl)-piperidin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]ox-

azin-3-one;
6-((*S*)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
6-((*R*)-5-{[1-(6-fluoro-quinolin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
4-(4-{[(*R*)-2-oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl)-oxazolidin-5-ylmethyl]-amino}-piperidin-1-yl)-quinoline-6-carbonitrile;
(R)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-3-(4-methoxy-phenyl)-oxazolidin-2-one;
(*R*)-3-(4-ethoxy-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-one; and
(*R*)-3-(4-difluoromethoxy-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-one;

or a salt of such a compound.

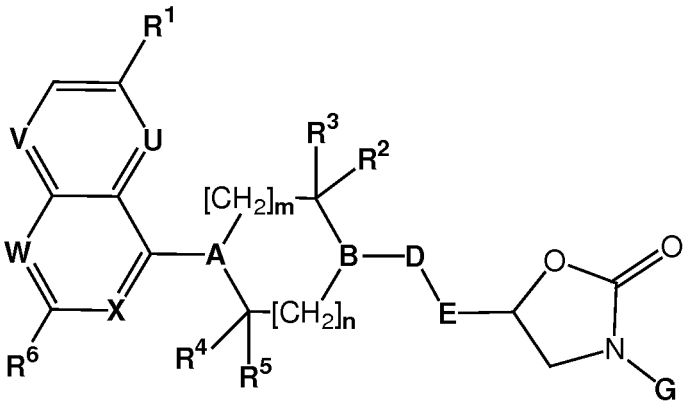
4. A compound of formula (IN) according to claim 1, or a pharmaceutically acceptable salt thereof, for use as a medicament.

5. A pharmaceutical composition containing, as active principle, a compound of formula (IN) according to claim 1, or a pharmaceutically acceptable salt thereof, and at least one therapeutically inert excipient.

6. A compound of formula (IN) according to claim 1, or a pharmaceutically acceptable salt thereof, for use in the prevention or treatment of a bacterial infection.

Patentansprüche

1. Verbindung von Formel (IN)



(I$_N$)

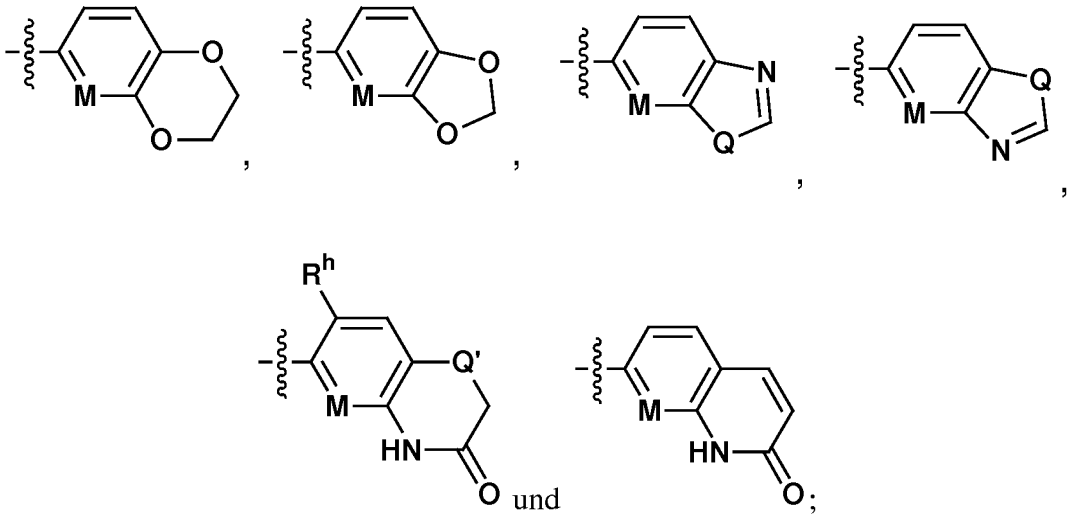
wobei

R^1 Wasserstoff, Alkoxy, Halogen oder Cyano repräsentiert;
eines oder zwei aus **U, V, W** und **X** N repräsentiert/repräsentieren und die restlichen jeweils CH oder, im Falle von X, CR^a repräsentieren;
R^a Wasserstoff oder Halogen repräsentiert;
R^6 Wasserstoff oder (C_1-C_4)Alkyl repräsentiert;
A N repräsentiert;

- **B N** repräsentiert; **D** eine Bindung repräsentiert; **E** CH_2 oder *-$COCH_2$- repräsentiert, wobei das Sternchen die Bindung andeutet, die an B angefügt ist; **R^2, R^3, R^4** und **R^5** jeweils H repräsentieren; und **m** und **n** jeweils die ganze Zahl 1 repräsentieren; oder

- **B** C(OH) repräsentiert, **D** eine Bindung repräsentiert, **E** CH_2 repräsentiert, R^2, R^3, R^4 und R^5 jeweils H repräsentieren und **m und n** jeweils die ganze Zahl 1 repräsentieren; oder
- **B** CH repräsentiert, **D** NR^b repräsentiert, **E** CH_2 repräsentiert, R^2, R^3, R^4 und R^5 jeweils H repräsentieren, R^b H oder $(C_1$-$C_4)$Alkyl repräsentiert und m und n jeweils die ganze Zahl 1 repräsentieren; oder
- **B** CH repräsentiert, **D** NH repräsentiert, **E** CH_2 repräsentiert, R^2, R^3, R^4 und R^5 jeweils H repräsentieren, **m** die ganze Zahl 2 repräsentiert und n die ganze Zahl 0 repräsentiert;

G Phenyl repräsentiert, das unsubstituiert, in Position 3 oder 4 monosubstituiert oder in den Positionen 3 und 4 disubstituiert ist, wobei jeder Substituent unabhängig ausgewählt ist aus der Gruppe bestehend aus $(C_1$-$C_4)$Alkyl, $(C_1$-$C_4)$Alkoxy, Fluoralkyl, Fluoralkoxy, Cyano, Halogen und $-NR^{N1}R^{N2}$; oder
G Pyridin-2-yl repräsentiert, das in Position 5 monosubstituiert ist, wobei der Substituent ausgewählt ist aus der Gruppe bestehend aus $(C_1$-$C_4)$Alkyl und Fluoroalkyl; oder
G 6,7-Dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl repräsentiert; oder
G eine Gruppe repräsentiert, die ausgewählt ist aus der Gruppe bestehend aus:

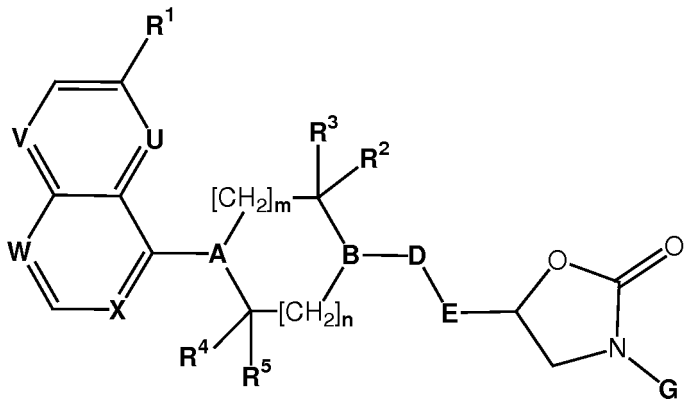


wobei R^h Wasserstoff oder Fluor repräsentiert;

M CH oder N repräsentiert; und **Q** und **Q'** unabhängig O oder S repräsentieren; und
R^{N1} und R^{N2} unabhängig $(C_1$-$C_4)$Alkyl repräsentieren oder zusammen mit dem Stickstoff, der sie trägt, einen Pyrrolidinring bilden;

oder ein Salz einer solchen Verbindung.

2. Verbindung von Formel (IN) nach Anspruch 1, die auch eine Verbindung von Formel ($I_{N\text{-}P1}$) ist



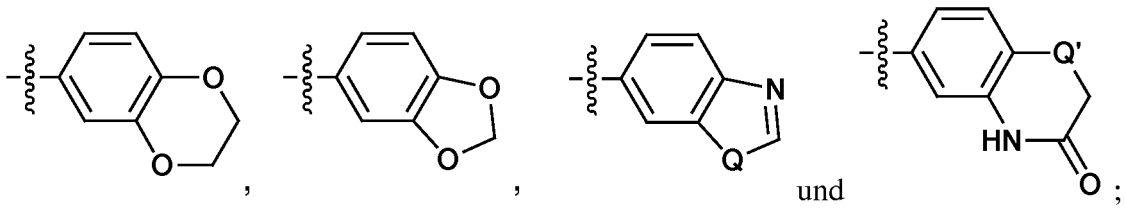
($I_{N\text{-}P1}$)

wobei

R^1 Alkoxy, Halogen oder Cyano repräsentiert;
eines oder zwei aus **U, V, W** und **X** N repräsentiert/repräsentieren und die restlichen jeweils CH repräsentieren oder, im Falle von X, CR^a repräsentieren;
R^a Wasserstoff oder Halogen repräsentiert;
A N repräsentiert;

- **B** N repräsentiert, **D** eine Bindung repräsentiert, **E** CH_2 repräsentiert, **R^2, R^3, R^4** und **R^5** jeweils H repräsentieren und m und n jeweils die ganze Zahl 1 repräsentieren; oder
- **B** C(OH) repräsentiert, **D** eine Bindung repräsentiert, **E** CH_2 repräsentiert, **R^2**, **R^3**, **R^4** und **R^5** jeweils H repräsentieren und **m und n** jeweils die ganze Zahl 1 repräsentieren; oder

G Phenyl repräsentiert, das unsubstituiert, in Position 3 oder 4 monosubstituiert oder in den Positionen 3 und 4 disubstituiert ist, wobei jeder Substituent unabhängig ausgewählt ist aus der Gruppe bestehend aus (C_1-C_4)Alkyl, (C_1-C_4)Alkoxy, Fluoralkyl, Fluoralkoxy, Cyano, Halogen und $-NR^{N1}R^{N2}$; oder
G Pyridin-2-yl repräsentiert, das in Position 5 monosubstituiert ist, wobei der Substituent ausgewählt ist aus der Gruppe bestehend aus (C_1-C_4)Alkyl und Fluoralkyl; oder
G eine Gruppe repräsentiert, die ausgewählt ist aus der Gruppe bestehend aus:



wobei

Q und **Q'** unabhängig O oder S repräsentieren; und
R^{N1} und **R^{N2}** unabhängig (C_1-C_4)Alkyl repräsentieren oder zusammen mit dem Stickstoff, der sie trägt, einen Pyrrolidinring bilden;

oder ein Salz einer solchen Verbindung.

3. Verbindung von Formel (IN) nach Anspruch 1, die ausgewählt ist aus:

3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-1-ylmethyl]-oxazolidin-2-on;
3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-methoxy-chinazolin-4-yl)-piperidin-4-ylmethyl]-oxazolidin-2-on;
3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylmethyl]-oxazolidin-2-on;
3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-chinazolin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
6-{5-[4-(6-Methoxy-chinazolin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4] thiazin-3-on;
3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-trifluormethoxy-phenyl)-oxazolidin-2-on;
(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-trifluormethoxy-phenyl)-oxazolidin-2-on;
(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-phenyl-oxazolidin-2-on;
(*R*)-3-(4-Brom-3-fluor-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(3,4-Dimethoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(4-Fluor-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;

(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-trifluormethyl-phenyl)-oxazolidin-2-on;
(*R*)-3-(3-Chlor-4-fluor-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-methyl-3-trifluormethyl-phenyl)-oxazolidin-2-on;
(*R*)-3-Benzothiazol-6-yl-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(4-Difluormethoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
3-{(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-benzonitril;
6-{(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-on;
(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-pyrrolidin-1-yl-phenyl)-oxazolidin-2-on;
(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(3-methoxyphenyl)-oxazolidin-2-on;
(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-propyl-phenyl)-oxazolidin-2-on;
(*R*)-3-(4-Ethyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(3,4-Dimethyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(3-Chlor-4-methoxy-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(3,4-Difluor-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(4-Fluor-3-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(4-Brom-3-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(3-Brom-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(4-methoxy-3-trifluormethyl-phenyl)-oxazolidin-2-on;
(*R*)-3-(3-Dimethylamino-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-Benzo[1,3]dioxol-5-yl-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*R*)-3-(3-Fluor-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*S*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
(*S*)-3-(3-Fluor-4-methyl-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
6-{(*S*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-on;
(*S*)-3-(3-Fluor-phenyl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(5-methyl-pyridin-2-yl)-oxazolidin-2-on;
5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-3-(5-trifluormethyl-pyridin-2-yl)-oxazolidin-2-on;
6-{(*R*)-5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-on;
6-{(*R*)-5-[4-(3-Fluor-6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-on;
6-{(*R*)-5-[4-(3-Fluor-6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-on;
(*R*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-(4-chinolin-4-yl-piperazin-1-ylmethyl)-oxazolidin-2-on;
(*R*)-3-(2,3-Dihydro-benzo[1,4]dioxin-6-yl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-3-ylamino]-methyl}-oxazolidin-2-on;
3-(6,7-Dihydro-[1,4]dioxino[2,3-*c*]pyridazin-3-yl)-5-[4-(6-methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
3-(6,7-Dihydro-[1,4]dioxino[2,3-*c*]pyridazin-3-yl)-5-[4-(6-methoxy-[1,5]]naphthyridin-4-yl)-piperazin-1-ylmethyl]-oxazolidin-2-on;
6-{5-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-pyrido[3,2-*b*][1,4]oxazin-3-on;
6-((*R*)-5-{2-[4-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperazin-1-yl]-2-oxo-ethyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-on;
6-((*R*)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-on;
6-((*R*)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-on;

(*R*)-3-(3-Fluor-4-methyl-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-on;
6-((*R*)-5-{[1-(3-Fluor-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-on;
6-((*R*)-5-{[1-(3-Fluor-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-on;
6-[(*R*)-5-({[1-(3-Fluor-6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-yl]-methyl-amino}-methyl)-2-oxo-oxazolidin-3-yl]-4*H*-benzo[1,4]thiazin-3-on;
6-{(*R*)-5-[4-Hydroxy-4-(6-methoxy-chinolin-4-yl)-piperidin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4H-benzo[1,4]thiazin-3-on;
6-{(*R*)-5-[4-(3-Fluor-6-methoxy-[1,5]naphthyridin-4-yl)-4-hydroxy-piperidin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-on;
6-{(*R*)-5-[4-Hydroxy-4-(6-methoxy-chinolin-4-yl)-piperidin-1-ylmethyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-on;
6-((*S*)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-on;
6-((*R*)-5-{[1-(6-Fluor-chinolin-4-yl)-piperidin-4-ylamino]-methyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-on;
4-(4-{[(*R*)-2-Oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl)-oxazolidin-5-ylmethyl]-amino}-piperidin-1-yl)-chinolin-6-carbonitril;
(*R*)-5-{[1-(6-Methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-3-(4-methoxy-phenyl)-oxazolidin-2-on;
(*R*)-3-(4-Ethoxy-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-on; und
(*R*)-3-(4-Difluormethoxy-phenyl)-5-{[1-(6-methoxy-[1,5]naphthyridin-4-yl)-piperidin-4-ylamino]-methyl}-oxazolidin-2-on;

oder ein Salz einer solchen Verbindung.

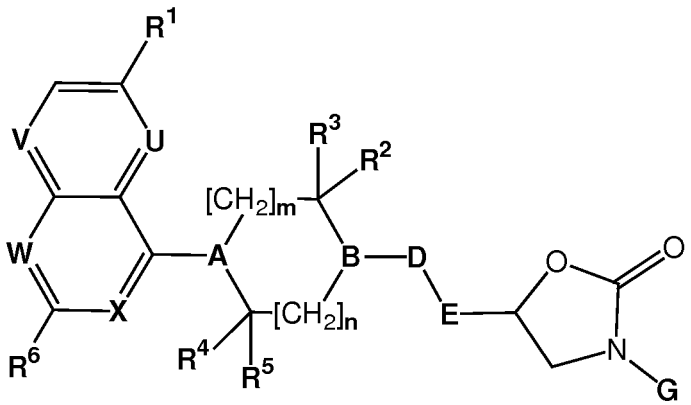
4. Verbindung von Formel (IN) nach Anspruch 1 oder ein pharmazeutisch akzeptables Salz davon zur Verwendung als Medikament.

5. Pharmazeutische Zusammensetzung, die als Wirkstoff eine Verbindung von Formel (IN) nach Anspruch 1 oder ein pharmazeutisch akzeptables Salz davon und wenigstens einen therapeutisch inerten Exzipienten enthält.

6. Verbindung von Formel (IN) nach Anspruch 1, oder ein pharmazeutisch akzeptables Salz davon, zur Verwendung bei der Verhütung oder Behandlung einer bakteriellen Infektion.

Revendications

1. Composé de formule (I_N)



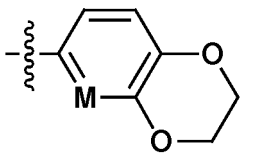
(I_N)

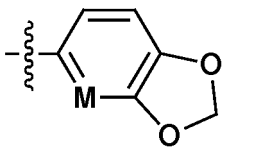
où

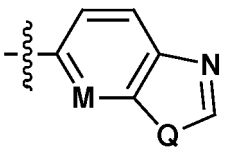
R^1 représente un hydrogène, un alkoxy, un halogène ou un cyano ;
un ou deux des radicaux **U, V, W** et **X** représente(nt) un N et les restants représentent chacun un CH ou, dans le cas de X, représente un CR^a ;
R^a représente un hydrogène ou un halogène ;
R^6 représente un hydrogène ou un $(C_1$-$C_4)$alkyle ;
A représente un N ;

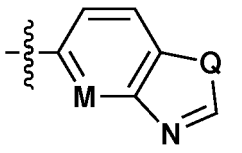
- B représente un N ; **D** représente une liaison ; **E** représente un CH_2 ou un *-$COCH_2$-, où l'astérisque indique la liaison qui est rattachée à B ; **R^2, R^3, R^4** et **R^5** représentent chacun un H ; et **m** et **n** représentent chacun le nombre entier 1 ; ou
- **B** représente un C(OH) ; **D** représente une liaison ; **E** représente un CH_2 ; **R^2, R^3, R^4** et **R^5** représentent chacun un H ; et **m** et **n** représentent chacun le nombre entier 1 ; ou
- **B** représente un CH ; **D** représente un NR^b ; **E** représente un CH_2 ; **R^2, R^3, R^4** et **R^5** représentent chacun un H ; **R^b** représente un H ou un $(C_1$-$C_4)$alkyle ; et **m** et **n** représentent chacun le nombre entier 1 ; ou
- **B** représente un CH ; **D** représente un NH ; **E** représente un CH_2 ; **R^2, R^3, R^4** et **R^5** représentent chacun un H ; **m** représente le nombre entier 2 et **n** représente le nombre entier 0 ;

G représente un phényle qui est non substitué, monosubstitué en position 3 ou 4 ou disubstitué en positions 3 et 4, chaque substituant étant indépendamment sélectionné dans le groupe consistant en un $(C_1$-$C_4)$alkyle, $(C_1$-$C_4)$alkoxy, fluoroalkyle, fluoroalkoxy, cyano, halogène et -$NR^{N1}R^{N2}$; ou
G représente un pyridin-2-yle qui est monosubstitué en position 5, le substituant étant sélectionné dans le groupe consistant en un $(C_1$-$C_4)$alkyle et un fluoroalkyle ; ou
G représente un 6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yle ; ou
G représente un groupement sélectionné dans le groupe consistant en les suivants :

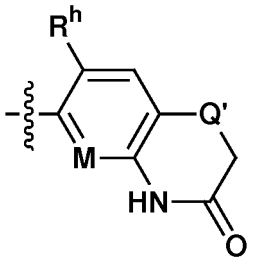


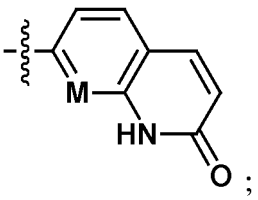
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et


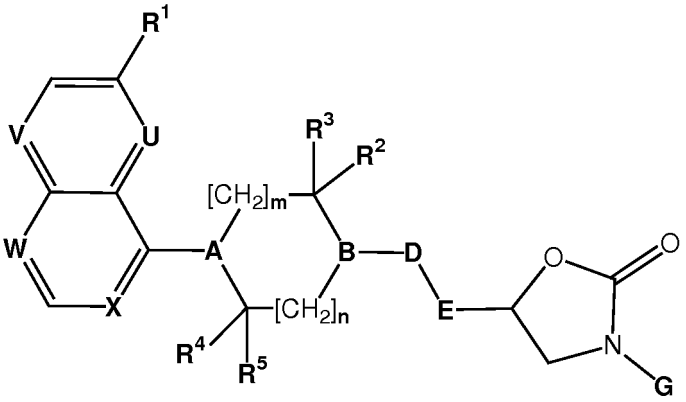
;

où

R^h représente un hydrogène ou un fluor ;
M représente un CH ou un N ; et **Q** et **Q'** représentent indépendamment un O ou un S ; et
R^{N1} et **R^{N2}** représentent indépendamment un $(C_1$-$C_4)$alkyle ou, avec l'azote qui les porte, forment un noyau pyrrolidine ;

ou sel de celui-ci.

2. Composé de formule (I_N) selon la revendication 1 qui est également un composé de formule ($I_{N\text{-}P1}$)



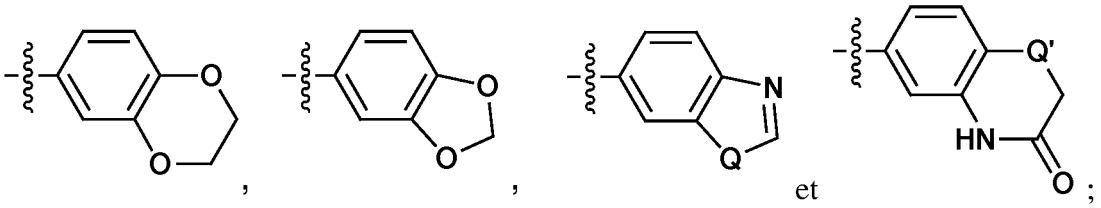
$(I_{N\text{-}P1})$

où

R^1 représente un alkoxy, un halogène ou un cyano ;
un ou deux des radicaux **U, V, W** et **X** représente(nt) un N et les restants représentent chacun un CH ou, dans le cas de X, représente un CR^a ;
R^a représente un hydrogène ou un halogène ;
A représente un N ;

- **B** représente un N ; **D** représente une liaison ; **E** représente un CH_2 ; **R^2, R^3, R^4** et **R^5** représentent chacun un H ; et **m** et n représentent chacun le nombre entier 1 ; ou
- **B** représente un C(OH) ; **D** représente une liaison ; **E** représente un CH_2 ; **R^2, R^3, R^4** et **R^5** représentent chacun un H ; et **m** et **n** représentent chacun le nombre entier 1 ; ou

G représente un phényle qui est non substitué, monosubstitué en position 3 ou 4 ou disubstitué en positions 3 et 4, chaque substituant étant indépendamment sélectionné dans le groupe consistant en un $(C_1\text{-}C_4)$alkyle, $(C_1\text{-}C_4)$alkoxy, fluoroalkyle, fluoroalkoxy, cyano, halogène et $-NR^{N1}R^{N2}$; ou
G représente un pyridin-2-yle qui est monosubstitué en position 5, le substituant étant sélectionné dans le groupe consistant en un $(C_1\text{-}C_4)$alkyle et un fluoroalkyle ; ou
G représente un groupement sélectionné dans le groupe consistant en les suivants :



où

Q et **Q'** représentent indépendamment un O ou un S ; et
R^{N1} et **R^{N2}** représentent indépendamment un $(C_1\text{-}C_4)$alkyle ou, avec l'azote qui les porte, forment un noyau pyrrolidine ;

ou sel de celui-ci.

3. Composé de formule (I_N) selon la revendication 1, qui est sélectionné dans le groupe consistant en les suivants :

3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-1-ylméthyl]-oxazolidin-2-one ;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-méthoxy-quinazolin-4-yl)-pipéridin-4-ylméthyl]-oxazolidin-2-one ;

3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-hydroxy-1-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylméthyl]-oxazolidin-2-one ;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-méthoxy-quinazolin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
6-{5-[4-(6-méthoxy-quinazolin-4-yl)-pipérazin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one ;
3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(3-trifluorométhoxy-phényl)-oxazolidin-2-one ;
(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(4-trifluorométhoxy-phényl)-oxazolidin-2-one ;
(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-phényl-oxazolidin-2-one ;
(*R*)-3-(4-bromo-3-fluoro-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(3,4-diméthoxy-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(4-fluoro-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(3-trifluorométhyl-phényl)-oxazolidin-2-one ;
(*R*)-3-(3-chloro-4-fluoro-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(4-méthyl-3-trifluorométhyl-phényl)-oxazolidin-2-one ;
(*R*)-3-benzothiazol-6-yl-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(4-difluorométhoxy-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
3-1(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-benzonitrile ;
6-{(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one ;
(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(4-pyrrolidin-1-yl-phényl)-oxazolidin-2-one ;
(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(3-méthoxy-phényl)-oxazolidin-2-one ;
(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(4-propyl-phényl)-oxazolidin-2-one ;
(*R*)-3-(4-éthyl-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(3,4-diméthyl-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(3-chloro-4-méthoxy-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(3,4-difluoro-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(4-fluoro-3-méthyl-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(4-bromo-3-méthyl-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(3-bromo-4-méthyl-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(4-méthoxy-3-trifluorométhyl-phényl)-oxazolidin-2-one ;
(*R*)-3-(3-diméthylamino-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-benzo[1,3]dioxol-5-yl-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*R*)-3-(3-fluoro-4-méthyl-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(*S*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
(S)-3-(3-fluoro-4-méthyl-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
6-{(*S*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one ;
(*S*)-3-(3-fluoro-phényl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;

5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(5-méthyl-pyridin-2-yl)-oxazolidin-2-one ;
5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-3-(5-trifluorométhyl-pyridin-2-yl)-oxazolidin-2-one ;
6-{(*R*)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyll-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-one ;
6-{(*R*)-5-[4-(3-fluoro-6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-one ;
6-{(*R*)-5-[4-(3-fluoro-6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one ;
(*R*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-(4-quinoléin-4-yl-pipérazin-1-ylméthyl)-oxazolidin-2-one ;
(*R*)-3-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-5-{[1-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-3-ylamino]-méthyl}-oxazolidin-2-one ;
3-(6,7-dihydro-[1,4]dioxino[2,3-*c*]pyridazin-3-yl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
3-(6,7-dihydro-[1,4]dioxino[2,3-c]pyridazin-3-yl)-5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-oxazolidin-2-one ;
6-{5-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-4*H*-pyrido[3,2-*b*][1,4]oxazin-3-one;
6-((*R*)-5-{2-[4-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipérazin-1-yl]-2-oxo-éthyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one ;
6-((*R*)-5-{[1-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylamino]-méthyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one ;
6-((*R*)-5-{[1-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylamino]-méthyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-one ;
(*R*)-3-(3-Fluoro-4-méthyl-phényl)-5-{[1-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylamino]-méthyl}-oxazolidin-2-one ;
6-((*R*)-5-{[1-(3-fluoro-6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylamino]-méthyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one ;
6-((*R*)-5-{[1-(3-fluoro-6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylamino]-méthyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]oxazin-3-one ;
6-[(*R*)-5-({[1-(3-fluoro-6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-yl]-méthyl-amino}-méthyl)-2-oxo-oxazolidin-3-yl]-4*H*-benzo[1,4]thiazin-3-one ;
6-{(*R*)-5-[4-hydroxy-4-(6-méthoxy-quinoléin-4-yl)-pipéridin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one ;
6-{(*R*)-5-[4-(3-fluoro-6-méthoxy-[1,5]naphtyridin-4-yl)-4-hydroxy-pipéridin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]thiazin-3-one ;
6-{(R)-5-[4-hydroxy-4-(6-méthoxy-quinoléin-4-yl)-pipéridin-1-ylméthyl]-2-oxo-oxazolidin-3-yl}-4*H*-benzo[1,4]oxazin-3-one ;
6-((*S*)-5-{[1-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylamino]-méthyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one ;
6-((*R*)-5-{[1-(6-fluoro-quinoléin-4-yl)-pipéridin-4-ylamino]-méthyl}-2-oxo-oxazolidin-3-yl)-4*H*-benzo[1,4]thiazin-3-one;
4-(4-{[(*R*)-2-oxo-3-(3-oxo-3,4-dihydro-2H-benzo[1,4]thiazin-6-yl)-oxazolidin-5-ylméthyl]-amino}-pipéridin-1-yl)-quinoléin-6-carbonitrile ;
(*R*)-5-{[1-(6-Méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylamino]-méthyl}-3-(4-méthoxy-phényl)-oxazolidin-2-one ;
(*R*)-3-(4-éthoxy-phényl)-5-{[1-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylamino]-méthyl}-oxazolidin-2-one ; and
(*R*)-3-(4-difluorométhoxy-phényl)-5-{[1-(6-méthoxy-[1,5]naphtyridin-4-yl)-pipéridin-4-ylamino]-méthyl}-oxazolidin-2-one ;

ou sel de celui-ci.

4. Composé de formule (I_N) selon la revendication 1 ou sel pharmaceutiquement acceptable de celui-ci, pour une utilisation en tant que médicament.

5. Composition pharmaceutique contenant, comme principe actif, un composé de formule (I_N) selon la revendication 1 ou un sel pharmaceutiquement acceptable de celui-ci et au moins un excipient thérapeutiquement inerte.

6. Composé de formule (I_N) selon la revendication 1 ou sel pharmaceutiquement acceptable de celui-ci, pour une utilisation dans la prévention ou le traitement d'une infection bactérienne.

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This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

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